

**.INTUSEAL**  
*passive fire protection manufacturer*

**KESİCİ**  
DIŞ TİCARET VE MAKİNA LTD. ŞTİ.

## FIRE STOPPING PRODUCTS



## PRODUCT CATALOG

[www.kesiciyangin.com](http://www.kesiciyangin.com)  
[www.kesicionline.com](http://www.kesicionline.com)



PRODUCT / WHERE TO USE			 COMBUSTIBLE PIPES	 NON-COMBUSTIBLE PIPES WITH INSULATION	 NON-COMBUSTIBLE PIPES	 CABLES	 VENTILATION	 LINEAR JOINT SEALS	 FIRE DOORS
1		INTU FR WRAP Intumescent pipe wrap	✓	✓	✗	✗	✗	✗	✗
2		INTU FR WRAP L Intumescent pipe wrap roll	✓	✓	✗	✗	✗	✗	✗
3		INTU FR COLLAR Intumescent pipe collar	✓	✗	✗	✗	✗	✗	✗
4		INTU FR COLLAR L Intumescent pipe collar roll	✓	✓	✗	✗	✗	✗	✗
5		INTU FR INSLEEVE Intumescent internal pipe sleeve	✓	✗	✗	✗	✗	✗	✗
6		INTU FR MASTIC Intumescent acrylic mastic	✓	✓	✓	✓	✓	✗	✓
7		INTU FR COAT A Fire rated ablative coat	✗	✗	✓	✗	✗	✓	✗
8		INTU FR BOARD A Fire rated ablative board	✗	✗	✓	✗	✗	✓	✗
9		INTU FR COAT I Fire rated intumescent coat	✗	✗	✓	✗	✗	✗	✗
10		INTU FR BRICK Intumescent fire stop brick	✗	✗	✗	✓	✗	✗	✗
11		INTU FR EJ SEAL Fire rated expansion joint seal	✗	✗	✗	✗	✗	✓	✗
12		INTU FR GRILLE Intumescent FR Grille	✗	✗	✗	✗	✓	✗	✓
13		INTU ATP Air transfer faceplate	✗	✗	✗	✗	✓	✗	✓
14		INTU STRIP F/FS/FC Intumescent door seals	✗	✗	✗	✗	✗	✗	✓
15		INTU FR GUARD Fire retardant impregnate	INTU FR GUARD is intended for fire protection of fabrics, decorations and clothing not exposed to wetting. The product gives cotton, wool, polyester, polyamide and decorative mosses a non-flammability feature.						



INTUSEAL Sp. z o.o. is a Polish based company. We manufacture Passive Fire Protection products. Our products have many official documents confirming their high efficiency, in the form of reports on fire resistance tests and obtained technical approvals. All our products are in the **European Union certification procedures (ETA)** after undergoing a series of rigorous tests to prove that they guarantee consistency and performance in all criteria and apply to certain standards within the market place. As well as having all products rigorously tested in the official furnaces, INTUSEAL also had official checks on its manufacturing processes and administration procedures before attaining the certification from polish governmental Building Institute (ITB Warszawa).

We are constantly developing our R&D department and improve the quality of our products.

Concerning scope of fireproof material production we distinguish four product categories depending on the target application:

- **CONSTRUCTION** - Passive fire protection systems and solutions in the fields of building and industrial construction.
- **MANUFACTURING** - Fire proof materials and components for the fire glazing fire protection doors production.
- **INDUSTRIAL** - Passive fire protection systems and solutions for shipbuilding and military industry.
- **TRANSPORT** - Fire protection components used in the production of means of transport, e.g. buses, trains, ships.



# INTU FR WRAP

Intumescent pipe wrap

TDS Technical Data Sheet

**INTUSEAL**  
passive fire protection manufacturer

## → PRODUCT DESCRIPTION

Firestop wrap **INTU FR WRAP** is made of graphite-based material. The material swells under the influence of high temperature (about 140°C), and fills the entire space created after burned flammable installations.

## → APPLICATION

**INTU FR WRAPS** are used for fire protection of penetrations with plastic pipes (PVC, PP, PE, HDPE, PXE/AL/PEX, PE-RT/AL/ PE-RT, PP-R/AL/PP-R, PP-R GLASS) running through fire partitions.

- protection of flammable pipes
- fire resistance up to 240 minutes
- availability: from 32mm to 200mm
- high swelling ratio
- ideal for installation in very tight spaces

### Rigid walls:

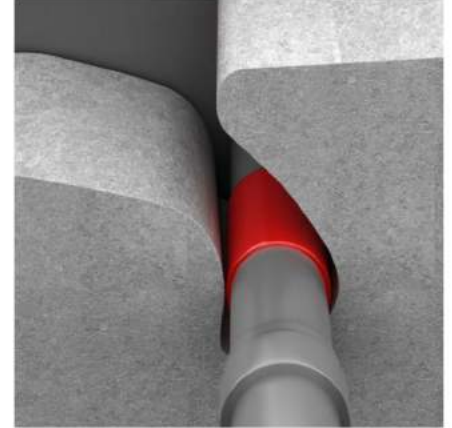
The wall must be at least 150mm thick and have concrete, cellular concrete structure or masonry structure, with a minimum density of 600kg/m<sup>3</sup>

### Rigid floors:

The floor must be at least 150mm thick and have concrete, cellular concrete structure or masonry structure, with a minimum density of 1700kg/m<sup>3</sup>

### Flexible walls:

The wall must be at least 125mm thick and have a steel profile structure covered on both sides with a minimum of 2 layers of boards with a thickness of 12.5mm.



## → COMPLIANCE

- European Technical Assessment ETA-18/0593
- Declaration of Performance DoP 1/2019

## → TRANSPORT AND STORAGE

It is recommended to store in dry internal conditions at temperatures between + 5°C and + 35°C

## → AVAILABILITY, DIMENSIONS AND QUANTITY OF INSERTS

Wrap type	Art. No.	Number of inserts in a wrap [pcs.]	Insert dimensions		
			Thickness [mm]	Width [mm]	Length [mm]
32mm	INWR32	1	2,0	60	110
40mm	INWR40	1	2,0	60	135
55mm	INWR55	1	2,0	60	183
63mm	INWR63	1	2,0	60	210
75mm	INWR75	1	2,0	60	245
82mm	INWR82	2	2 x 2,0	60	268/280
110mm	INWR110	2	2 x 2,0	60	355/365
125mm	INWR125	4	4 x 2,0	100	402/413/425/438/452
160mm	INWR160	5	5 x 2,0	100	510/525/540/550/565
200mm	INWR200	8	8 x 2,0	100	640/655/665/680/690/700/710/725



## → FIRE RESISTANCE CLASSIFICATION

IN WALL	DIAMETER	32mm	40mm	50mm	55mm	63mm	75mm	90mm	110mm	125mm	160mm	200mm	
	PVC	EI240	EI240	EI240	EI120	EI120	EI120	EI120	EI120	EI120	EI120	EI120	EI120
	PP	EI240	EI240	EI240	EI120	EI120	EI120	EI120	EI120	EI120	EI60	EI60	EI60
	HDPE	EI240	EI120	EI120	EI120	EI120	EI120	EI120	EI120	EI120	EI120	EI120	EI90
	PEX/AL./PEX	EI120	EI120	EI120	EI120	EI120	EI120	X	X	X	X	X	
	PE-RT/AL./PE-RT	EI240	EI240	EI240	EI240	EI240	EI240	X	X	X	X	X	
	PP-R/AL./PP-R	EI240	EI240	EI240	EI240	EI240	EI240	EI240	EI240	EI240	X	X	X
	PP-R GLASS	EI120	EI120	EI120	EI120	EI120	EI120	EI120	EI120	EI120	X	X	X

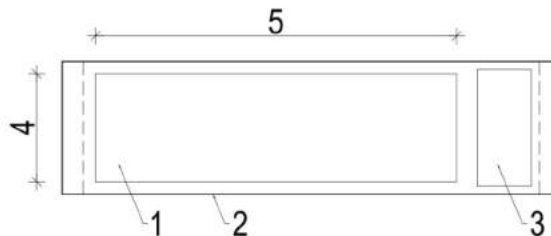
IN FLOOR	DIAMETER	32mm	40mm	50mm	55mm	63mm	75mm	90mm	110mm	125mm	160mm	200mm	
	PVC	EI240	EI240	EI240	EI240	EI240	EI240	EI120	EI120	EI120	EI120	EI120	EI120
	PP	EI240	EI240	EI240	EI240	EI240	EI240	EI240	EI240	EI90 EI120*	EI90 EI120*	X	
	HDPE	EI240	EI240	EI240	EI240	EI240	EI240	EI120	EI120	EI120	EI120	EI90 EI120*	
	PEX/AL./PEX	EI240	EI240	EI240	EI240	EI240	EI240	X	X	X	X	X	
	PE-RT/AL./PE-RT	EI120	EI120	EI120	EI120	EI120	EI120	X	X	X	X	X	
	PP-R/AL./PP-R	EI240	EI240	EI240	EI240	EI240	EI240	EI240	EI240	EI240	X	X	X
	PP-R GLASS	EI240	EI240	EI240	EI240	EI240	EI240	EI240	EI240	EI240	X	X	X

IN FLEXIBLE WALL	DIAMETER	32mm	40mm	50mm	55mm	63mm	75mm	90mm	110mm
	PVC	EI120	EI120	EI120	EI120	EI120	EI120	EI120	EI120
	PP	EI120	EI120	EI120	EI120	EI120	EI120	EI120	EI120
	HDPE	EI120	EI120	EI120	EI120	EI120	EI120	EI120	EI120

\*outside of ETA, result based on the test report

## → INSTALLATION METHOD

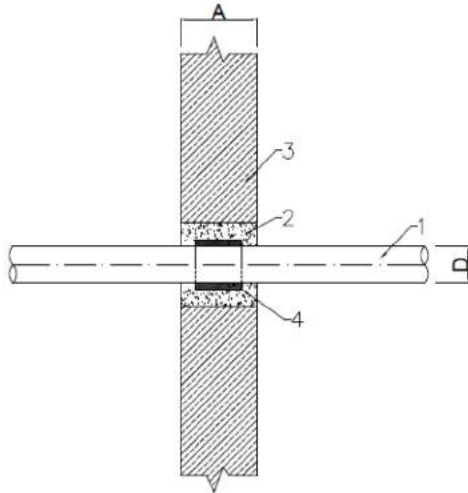
WRAP DIAGRAM:



- 1 - intumescent insert
- 2 - PE film bag
- 3 - self-adhesive tape
- 4 - wrap width
- 5 - wrap length

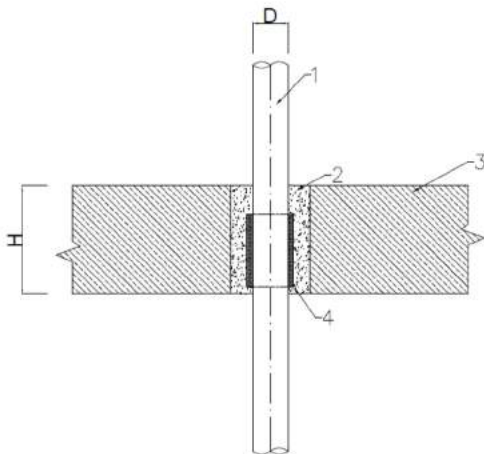
Wrap the pipe.  
Slide it inside the partition.  
Fill the gap with mortar.

## INSTALLATION OF THE WRAP



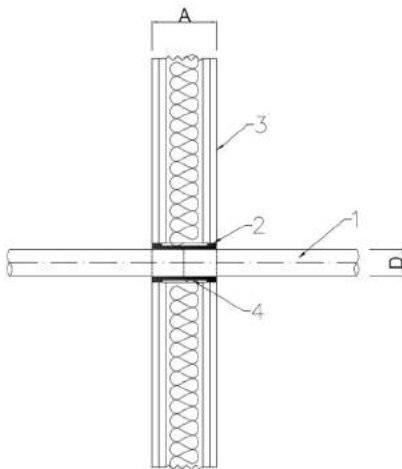
**Fig. 1. A single pipe in a wall**

- 1 – flammable pipe
- 2 – cement mortar filling
- 3 – wall
- 4 – INTU FR WRAP installed in wall axis



**Fig. 2. A single pipe in a floor**

- 1 – flammable pipe
- 2 – cement mortar filling
- 3 – floor
- 4 – INTU FR WRAP installed 1cm from the floor bottom



**Fig. 3. A single pipe in a drywall**

- 1 – flammable pipe
- 2 – cement mortar filling
- 3 – drywall
- 4 – 2 x INTU FR WRAP installed next to each other

# INTU FR WRAP L

Intumescent pipe wrap roll

TDS Technical Data Sheet

**INTUSEAL**  
passive fire protection manufacturer

## → PRODUCT DESCRIPTION

Firestop tape **INTU FR WRAP L** is made of graphite-based material. The material swells under the influence of high temperature (about 140°C), and fills the entire space created after burned flammable systems.

## → APPLICATION

**INTU FR WRAP L** is used for fire protection of penetrations with plastic pipes (PVC, PP, PE, HDPE, PXE / AL / PEX, PE-RT / AL / PE-RT, PP-R / AL / PP-R, PP-R GLASS) running through fire partitions.

It is also possible to protect non-flammable pipes with insulation made of synthetic Armaflex /K-flex or PE foam, penetrating floors or walls.

- protection of flammable and non-flammable pipes insulated with synthetic rubber Armaflex / K-Flex or PE foam
- fire resistance up to 240 minutes
- availability: roll length: 10, 25 or 50 meters; width: 60mm and 100mm
- installation on pipes with large diameters is possible
- easy to cut
- high swelling ratio
- ideal for installation in very tight spaces

### Rigid walls:

The wall must be at least 150mm thick and have concrete, cellular concrete structure or masonry structure, with a minimum density of 600kg/m<sup>3</sup>

### Rigid floors:

The floor must be at least 150mm thick and have concrete, cellular concrete structure or masonry structure, with a minimum density of 1700kg/m<sup>3</sup>

### Flexible walls:

The wall must be at least 125mm thick and have a steel profile structure covered on both sides with a minimum of 2 layers of boards with a thickness of 12.5mm.

## → AVAILABILITY

Type	Art. No.
10mb x 60mm	INWRL60X10
10mb x 60mm (AT)	INWRL60X10AT
25mb x 60mm	INWRL60X25
25mb x 60mm (AT)	INWRL60X25AT
10mb x 100mm	INWRL100X10
10mb x 100mm (AT)	INWRL100X10AT
25mb x 100mm	INWRL100X25
25mb x 100mm (AT)	INWRL100X25AT

AT – Adhesive Tape



## → COMPLIANCE

### Test reports:

- European Technical Assessment ETA-18/0593
- Declaration of Performance DoP 1/2019

## → TRANSPORT AND STORAGE

It is recommended to store in dry internal conditions at temperatures between + 5°C and + 35°C



#### → FIRE RESISTANCE CLASSIFICATION for flammable pipes

IN WALLS	DIAMETER	32mm	40mm	50mm	55mm	63mm	75mm	90mm	110mm	125mm	160mm	200mm	
	PVC	EI240	EI240	EI240	EI120	EI120	EI120	EI120	EI120	EI120	EI120	EI120	EI120
	PP	EI240	EI240	EI240	EI120	EI120	EI120	EI120	EI120	EI120	EI60	EI60	EI60
	HDPE	EI240	EI120	EI120	EI120	EI120	EI120	EI120	EI120	EI120	EI120	EI120	EI90
	PEX/AL./PEX	EI120	EI120	EI120	EI120	EI120	EI120	EI120	X	X	X	X	X
	PE-RT/AL./PE-RT	EI240	EI240	EI240	EI240	EI240	EI240	EI240	X	X	X	X	X
	PP-R/AL./PP-R	EI240	EI240	EI240	EI240	EI240	EI240	EI240	EI240	EI240	X	X	X
	PP-R GLASS	EI120	EI120	EI120	EI120	EI120	EI120	EI120	EI120	EI120	X	X	X

IN FLOORS	DIAMETER	32mm	40mm	50mm	55mm	63mm	75mm	90mm	110mm	125mm	160mm	200mm	
	PVC	EI240	EI240	EI240	EI240	EI240	EI240	EI240	EI120	EI120	EI120	EI120	EI120
	PP	EI240	EI240	EI240	EI240	EI240	EI240	EI240	EI240	EI240	EI90 EI120*	EI90 EI120*	X
	HDPE	EI240	EI240	EI240	EI240	EI240	EI240	EI120	EI120	EI120	EI120	EI120	EI90 EI120*
	PEX/AL./PEX	EI240	EI240	EI240	EI240	EI240	EI240	EI240	X	X	X	X	X
	PE-RT/AL./PE-RT	EI120	EI120	EI120	EI120	EI120	EI120	EI120	X	X	X	X	X
	PP-R/AL./PP-R	EI240	EI240	EI240	EI240	EI240	EI240	EI240	EI240	EI240	X	X	X
	PP-R GLASS	EI240	EI240	EI240	EI240	EI240	EI240	EI240	EI240	EI240	X	X	X

FLEXIBLE WALL	DIAMETER	32mm	40mm	50mm	55mm	63mm	75mm	90mm	110mm	
	PVC	EI120	EI120	EI120	EI120	EI120	EI120	EI120	EI120	EI120
	PP	EI120	EI120	EI120	EI120	EI120	EI120	EI120	EI120	EI120
	HDPE	EI120	EI120	EI120	EI120	EI120	EI120	EI120	EI120	EI120

#### → FIRE RESISTANCE CLASSIFICATION for non-flammable pipes with flammable insulation

Steel pipes in synthetic rubber insulation	Partition	INSULATION synthetic rubber	Material	42,4mm	88,9mm	159,0mm	219,0mm
	Wall	9mm	steel	EI120	EI240	EI60	EI60
	Wall	50mm	steel	EI120	EI120	EI120	EI90
	Floor	9mm	steel	EI240	EI120	EI120	EI60*
	Floor	50mm	steel	EI240	EI120	EI120	EI90*
	Flexible wall	9mm	steel	EI120	EI90	EI60*	X
	Flexible wall	50mm	steel	EI120	EI120	X	X

Copper pipes in synthetic rubber insulation	Partition	INSULATION synthetic rubber	Material	15mm	54,0mm	108,0mm
	Wall	9mm	copper	EI120	EI240	EI60
	Wall	50mm	copper	EI120	EI120	EI60
	Floor	9mm	copper	EI240	EI120	X
	Floor	50mm	copper	EI240	EI120	X
	Flexible wall	9mm	copper	EI120*	X	X
	Flexible wall	50mm	copper	EI120*	EI60*	X



### → FIRE RESISTANCE CLASSIFICATION for a bundle of copper pipes

Copper pipes in PE foam insulation	Partition	INSULATION PE foam	Material	1/4"	5/8"	bundle (separate wrapping) 1/4" 1/4" 5/8"	bundle (collective wrapping) 1/4" 1/4" 5/8"	Numbers of wrap
	Wall	9mm	copper	EI240	EI120	EI120	EI120	4
	Floor	9mm	copper	EI120	EI120	EI120	EI120	4

### → FIRE RESISTANCE CLASSIFICATION for a bundle of pipes copper, flammable and cables

Copper pipes in PE +flammable pipes + cabel	Partition	Type	EI	Numbers of wrap
	Ściana	Copper in PE (1/4" i 5/8") + cable Ø 21mm + PP pipe Ø 25mm	EI120*	4
	Strop	Copper in PE (1/4" i 5/8") + cable Ø 21mm + PP pipe Ø 32mm	EI240*	4

\*outside of ETA, result based on the test report

### → FIRE RESISTANCE CLASSIFICATION – outside ETA

Combustible insulated pipes (rubber) \*

TYPE	DN	THICKNESS RUBBER [mm]	PARTITION	EI	Numbers of wrap
HDPE	110	2x9	wall	EI 120	4
PP-R GLASS	110	2x9	wall	EI 120	4
PP-R	110	2x9	wall	EI 120	4
HDPE	110	2x9	floor	EI 120	4
PP	110	2x9	floor	EI 120	4
HDPE	110	2x13	floor	EI 120	4
PP-R	110	2x9	floor	EI 120	4
PP-R GLASS	110	2x9	floor	EI 120	4
HDPE	160	2x23	floor	EI 120	8

Combustible insulated pipes (Tubolit)\*

TYPE	DN	Tubolit DG Plus [mm]	PARTITION	EI	Numbers of wrap
PP	75	2x9	wall	EI 60	2
PP	110	2x13	wall	EI 60	4
PP	75	2x9	floor	EI 240	2

Other combustible pipes \*

TYPE	DN	PARTITION	EI	Numbers of wrap
PP Basalt	110	wall	EI 240	2
PP Basalt	110	floor	EI 90	2

Other combustible pipes next to each other\*

TYPE	DN	PARTITION	EI	Numbers of wrap
PP + PP	110	wall	EI 120	2
PP + HDPE	110	floor	EI 120	2
3x HDPE	3x32	floor	EI 240	1
3x HDPE	3x32	wall	EI 120	1

\* outside of ETA, result based on the test report

#### → TAPE YIELD

#### FLAMMABLE PIPES

Wrap type [width]	Diameters [mm]	Pipe type	Number of wraps	Amount from a roll 10m [pcs.]
60mm	≤32	PVC, PP, PE, HDPE	1	88,5
	≤40		1	72,4
	≤50		1	59,0
	≤55		1	54,0
	≤63		1	47,5
	≤75		1	40,3
	≤82		2	18,1
	≤90		2	16,6
	≤110		2	13,7
100mm	≤125		4	5,9
	≤160		5	3,7
	≤200	8	1,8	

#### LAYERED FLAMMABLE PIPES

Wrap type [width]	Diameters [mm]	Pipe type	Number of wraps	Amount from a roll 10m [pcs.]
60mm	≤20	PP STABI (Aluminium/Glass)	1	132,7
	≤25		1	109,8
	≤32		1	88,5
	≤40		1	72,4
	≤50		1	59,0
	≤63		1	47,5
	≤75		1	40,3
	≤90		2	16,6
60mm	≤110	2	13,7	
	≤20	PEX/AL/PEX	1	132,7
	≤25		1	109,8
	≤32		1	88,5
	≤40		1	72,4
	≤50		1	59,0
	≤63		1	47,5
	≤75		1	40,3
60mm	≤90		2	16,6
	≤110	2	13,7	
	≤20	PE-RT/AL/PE-RT	1	132,7
	≤25		1	109,8
	≤32		1	88,5
	≤40		1	72,4
	≤50		1	59,0
	≤63		1	47,5
≤75	1		40,3	
≤90	2		16,6	

#### NON-FLAMMABLE PIPES IN SYNTHETIC RUBBER INSULATION \*\*

Wrap type [width]	Diameters [mm]	Thickness of the pipe wall [mm]	Armaflex thickness	Number of wraps
60mm	≤159,0 mm	2,0 - 14,2	9	1
			10	2
			13	2
			16	2
			19	2
			25	3
			32	3
			40	4
			50	4

\*\* detailed information in calculator



# INTU FR WRAP L

Intumescent pipe wrap roll

TDS Technical Data Sheet

**INTUSEAL**  
passive fire protection manufacturer

## → INSTALLATION METHOD

Prepare the appropriate length of the tape (cut off from the roll). Wrap the pipe. Slide inside the fire partition. Fill the gap with cement mortar.

### INSTALLATION IN FLOORS

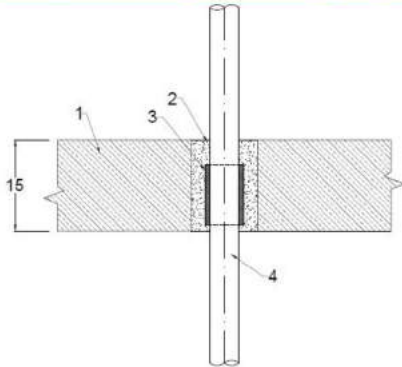


Fig. 1. A single pipe in a floor

- 1 – floor
- 2 – cement mortar filling
- 3 – INTU FR WRAP L firestop tape max 1 cm above floor
- 4 – flammable pipe

### INSTALLATION IN WALLS

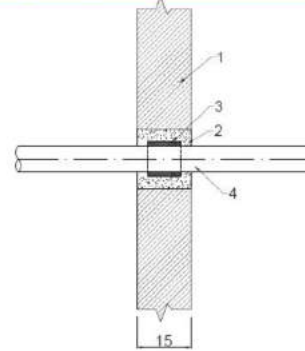


Fig. 2. A single pipe in a wall

- 1 – wall
- 2 – cement mortar filling
- 3 – INTU FR WRAP L firestop tape
- 4 – flammable pipe

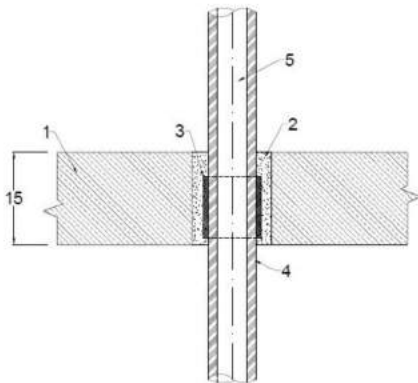


Fig. 3. A single pipe with rubber in a floor

- 1 – floor
- 2 – cement mortar filling
- 3 – INTU FR WRAP L firestop tape max 1 cm above floor
- 4 – rubber
- 5 – non-flammable pipe

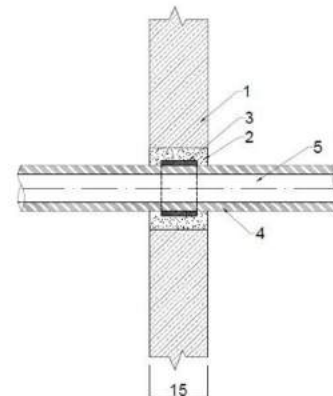


Fig. 4. A single pipe with rubber in a wall

- 1 – wall
- 2 – cement mortar filling
- 3 – INTU FR WRAP L firestop tape
- 4 – rubber
- 5 – non-flammable pipe

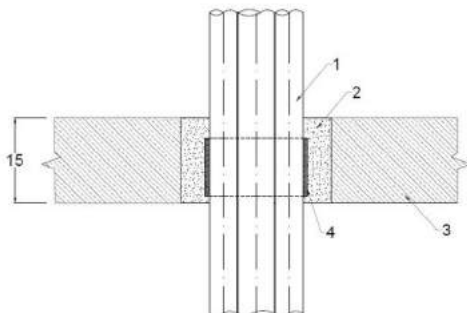


Fig. 5. A bundle of pipes in a floor

- 1 – a bundle of flammable pipes
- 2 – cement mortar filling
- 3 – floor
- 4 – INTU FR WRAP L firestop tape max 1 cm above floor

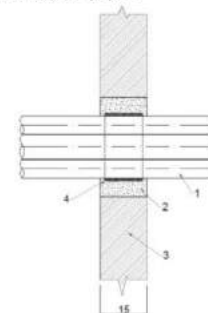
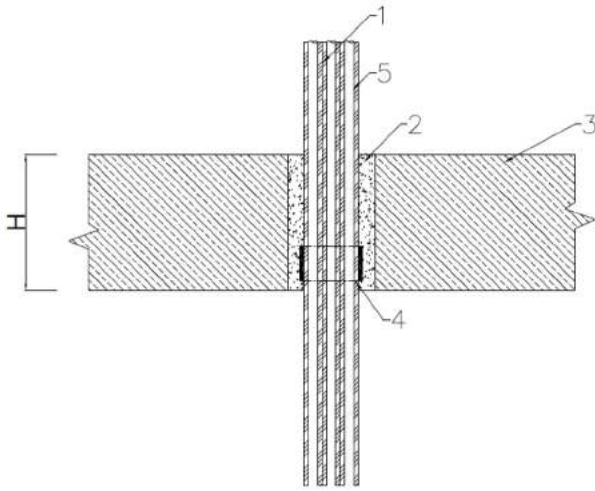


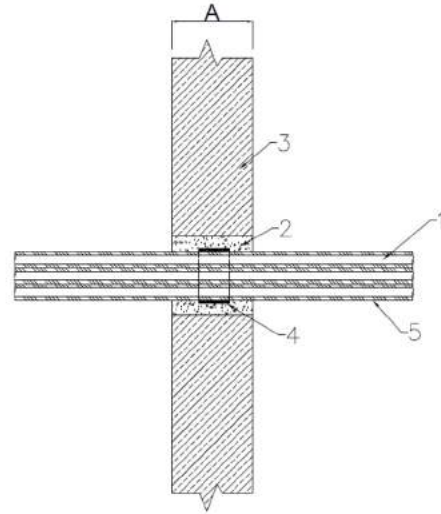
Fig. 6. A bundle of pipes in a wall

- 1 – a bundle of flammable pipes
- 2 – cement mortar filling
- 3 – wall
- 4 – INTU FR WRAP L firestop tape



**Fig. 7. A bundle of copper pipes insulated with PE foam in a floor**

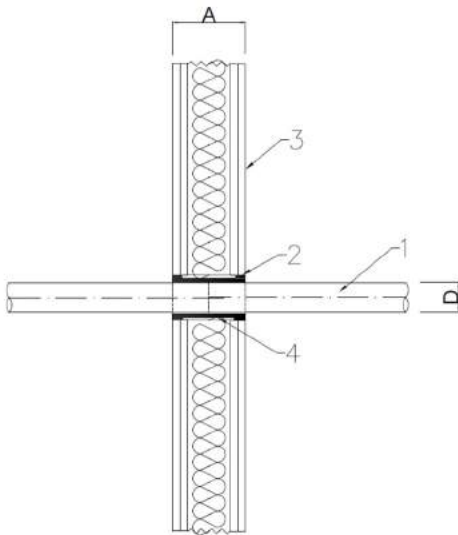
- 1 – a bundle of copper pipes  $\leq \varnothing 5/8''$  in PE foam insulation
- 2 – cement mortar filling
- 3 – floor
- 4 – INTU FR WRAP L firestop tape max 1 cm above floor
- 5 - PE foam insulation



**Fig.8. A bundle of copper pipes insulated with PE foam in a wall**

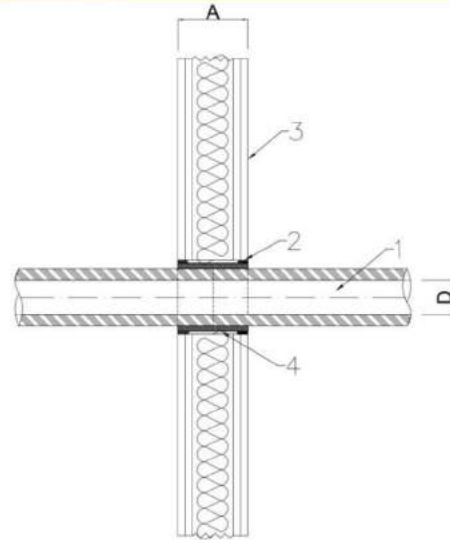
- 1 – a bundle of copper pipes  $\leq \varnothing 5/8''$  in PE foam insulation
- 2 – cement mortar filling
- 3 – wall
- 4 – INTU FR WRAP L firestop tape
- 5 - PE foam insulation

## INSTALLATION IN FLEXIBLE WALLS



**Fig. 9. A single pipe in a drywall**

- 1 – flammable pipe
- 2 – cement mortar filling
- 3 – drywall
- 4 – 2 x INTU FR WRAP L firestop tape



**Fig. 10. A single pipe with rubber in a drywall**

- 1 – non-flammable pipe
- 2 – cement mortar filling
- 3 – drywall
- 4 – 2 x INTU FR WRAP L firestop tape



# INTU FR COLLAR

Intumescent pipe collar

TDS Technical Data Sheet

**INTUSEAL**  
passive fire protection manufacturer

## → PRODUCT DESCRIPTION

The firestop collar **INTU FR COLLAR** is composed of a flexible insert made of graphite-based material that swells under the influence of temperature above 140°C and an external casing made of 1.0 mm steel sheet protected against corrosion by a red paint coating. The steel collar casing is equipped with a lock used for strapping the ends and stabilizing it on the pipe, as well as mounting brackets fixing the collar to the partition. The collars ensure fire resistance class up to max EI 240.

## → APPLICATION

**INTU FR COLLAR** is used for fire protection of penetrations with plastic pipes (PVC, PP, PE, HDPE) running through fire partitions (flexible walls, rigid walls, floors)

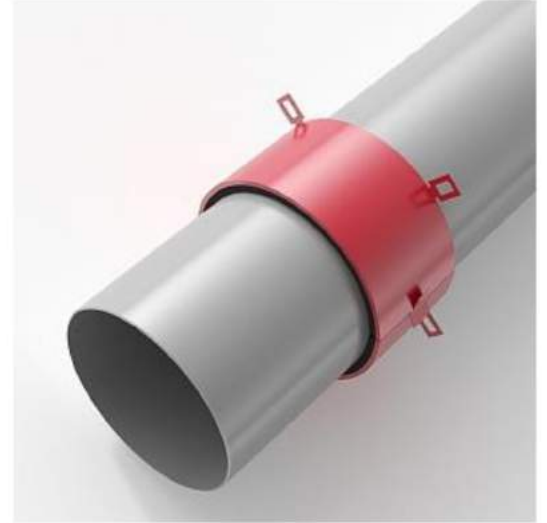
## → COMPLIANCE

### Test reports:

- LZP01-0258/16/Z00NzP of 04.11.2016 - wall
- LZP04-0258/16/Z00NzP z dnia 06.12.2016 - wall
- LZP07-0258/16/Z00NzP z dnia 30.01.2017 - wall
- LZP10-0258/16/Z00NzP z dnia 27.02.2017 - drywall
- LZP12-0258/16/Z00NzP z dnia 23.03.2017 - floor
- LZP14-0258/16/Z00NzP z dnia 22.05.2017 - wall
- LZP16-0258/16/Z00NzP z dnia 28.08.2017 - wall
- LZP17-0258/16/Z00NzP z dnia 18.09.2017 - wall
- LZP18-0258/16/Z00NzP z dnia 26.09.2017 - floor
- LZP32-0258/16/Z00NzP z dnia 22.11.2017 - floor
- LZP42-0258/16/Z00NzP z dnia 18.12.2017 - floor
- Declaration of Performance DoP 2/2019

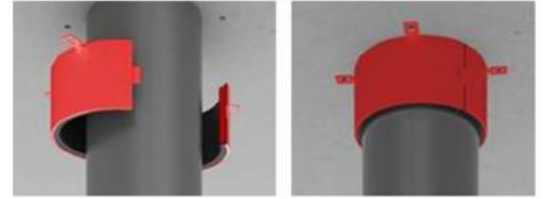
## → TRANSPORT AND STORAGE

**INTU FR COLLAR** has no negative impact on the environment. In the case of long-term storage, it is recommended to keep it in enclosed spaces. The storage period does not affect the product's properties.



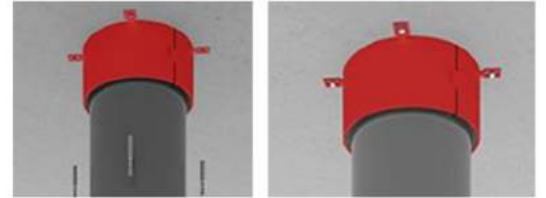
## → INSTALLATION METHOD

The gaps between the hole in a wall or a floor and the pipe wall should be filled with acrylic intumescent mastic.



1. Install **INTU FR COLLAR** on the pipe

2. Secure **INTU FR COLLAR** using the lock



3. Use steel plugs for installation in the partition

4. Fill the gaps with intumescent acrylic mastic.

# INTU FR COLLAR

Intumescent pipe collar

TDS Technical Data Sheet

**INTUSEAL**  
passive fire protection manufacturer

## → AVAILABILITY

Type	Art. No.	Intumescent material (width x thickness)
INTU FR COLLAR 32	INCO32	30mm x 4mm
INTU FR COLLAR 40	INCO40	30mm x 4mm
INTU FR COLLAR 55	INCO55	30mm x 6mm
INTU FR COLLAR 63	INCO63	30mm x 6mm
INTU FR COLLAR 75	INCO75	30mm x 6mm
INTU FR COLLAR 82	INCO82	30mm x 8mm
INTU FR COLLAR 90	INCO90	30mm x 8mm
INTU FR COLLAR 110	INCO110	30mm x 10mm
INTU FR COLLAR 125	INCO125	40mm x 14mm
INTU FR COLLAR 160	INCO160	40mm x 18mm
INTU FR COLLAR 200	INCO200	60mm x 20mm
INTU FR COLLAR 250	INCO250	150mm x 30mm
INTU FR COLLAR 315	INCO315	150mm x 30mm

## → SOLUTION DETAILS

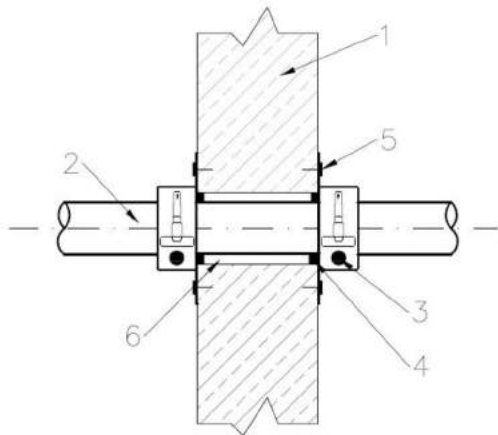


Fig. 1. Wall penetration

- 1 – rigid wall ( $H \geq 150$  mm) or flexible wall ( $H \geq 100$  mm)
- 2 – plastic pipe
- 3 – **INTU FR COLLAR** installed on both sides of the wall
- 4 – a gap around the collar, on both sides of the partition, filled with intumescent acrylic mastic
- 5 – steel screw
- 6 – empty space

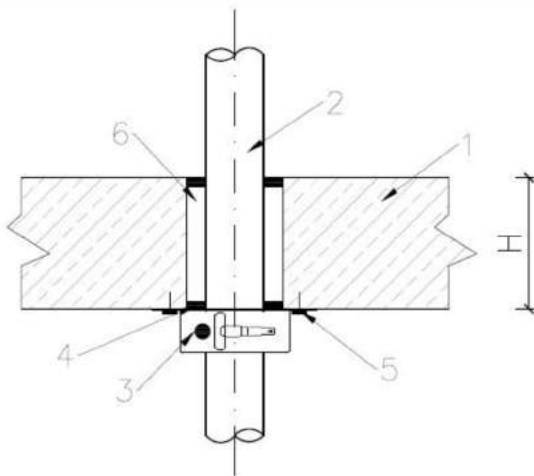


Fig. 2. Floor penetration

- 1 – rigid floor ( $H \geq 150$  mm)
- 2 – plastic pipe
- 3 – **INTU FR COLLAR** installed from the bottom of the floor
- 4 – a gap filled with intumescent acrylic mastic
- 5 – steel screw
- 6 – empty space



## → FIRE RESISTANCE CLASSIFICATION

### • WALL

DN	32mm	40mm	50mm	55mm	63mm	75mm	90mm	110mm	125mm	160mm	200mm	315mm
PVC	EI240	EI240	EI240	EI120	EI120	EI120	EI120	EI120	EI120	EI120	EI120	EI120
PP	EI120	EI120	EI120	EI120	EI120	EI120	EI120	EI120	EI120*	EI120*	EI120*	X
HDPE	EI120	EI120	EI120	EI120	EI120	EI120	EI120	EI120	EI120	EI120	EI60*	X

### • FLOOR

DN	32mm	40mm	50mm	55mm	63mm	75mm	90mm	110mm	125mm	160mm	200mm	315mm
PVC	EI240	EI240	EI240	EI120	EI120	EI120	EI120	EI120	EI120	EI120	EI120	EI120
PP	EI120	EI120	EI120	EI120	EI120	EI120	EI120	EI120	EI120	EI120	EI120*	X
HDPE	EI240	EI240	EI240	EI120	EI120	EI120	EI120	EI120	EI120	EI120	EI120*	X

### • FLEXIBLE WALL

DN	32mm	40mm	50mm	55mm	63mm	75mm	90mm	110mm	125mm	160mm	200mm
PVC	EI120*	EI120*	EI120*	EI120*	EI120*	EI120	EI120	EI120	EI90	EI90	X
PP	EI120	EI120*	EI120*	EI120*	EI120*	EI120	EI60	EI60	EI60	EI60	X
HDPE	EI120	EI60	EI60	EI60	EI60	EI60	EI60	EI60	EI60	EI60	X

\* details – contact with the technical department

# INTU FR COLLAR L

Intumescent pipe collar roll

TDS Technical Data Sheet

**INTUSEAL**  
passive fire protection manufacturer

## → PRODUT DESCRIPTION

Firestop collar **INTU FR COLLAR L** is composed of:

- 1) a flexible insert (**INTU FR WRAP L**) made of graphite-based material that swells under the influence of temperature above 140°C and
- 2) an external casing made of 1.0 mm steel sheet delivered in 2.5 m sections. The steel collar casing is equipped with mounting brackets for attaching the collar to the partition. The universal size enables installation of the collar on various pipe diameters.

## → APPLICATION

**INTU FR COLLAR L** is used for fire protection of penetrations with non-flammable pipes in flammable synthetic rubber insulation and flammable pipes running through fire partitions

### Rigid walls:

The wall must be at least 150mm thick and have concrete, cellular concrete structure or masonry structure, with a minimum density of 600kg/m<sup>3</sup>

### Rigid floors:

The floor must be at least 150mm thick and have concrete, cellular concrete structure or masonry structure, with a minimum density of 1700kg/m<sup>3</sup>

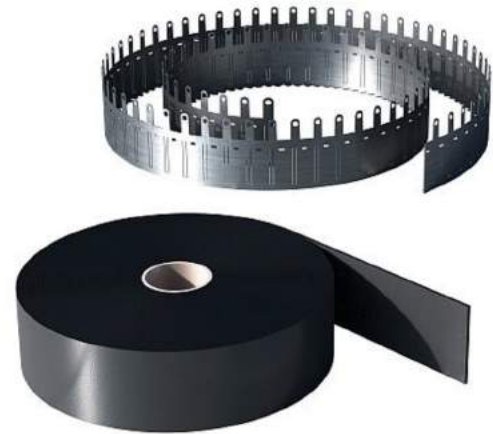
## → AVAILABILTY, DIMENSIONS

Type	Art. No.	Length
INTU FR COLLAR L	INCOL2500	2,5m

## → COMPLIANCE

### Raporty z badań:

- LZP17-02580/16/Z00NZN/e
- LZP42-02580/16/Z00NZN/e
- LZP01-01808/18/Z00NZN/e
- LZP54-02580/16/Z00NZN/e
- LZP08-01993/17/Z00NZN/e
- Declaration of Performance DoP 3/2019



## → TRANSPORT AND STORAGE

**INTU FR COLLAR L** has no negative impact on the environment. In the case of long-term storage, it is recommended to keep it in enclosed spaces. The storage period does not affect the product's properties.



# INTU FR COLLAR L

Intumescent pipe collar roll

TDS Technical Data Sheet

**INTUSEAL**  
passive fire protection manufacturer

## → INSTALLATION METHOD



1. Fill the gaps with intumescent acrylic mastic INTU FR MASTIC.



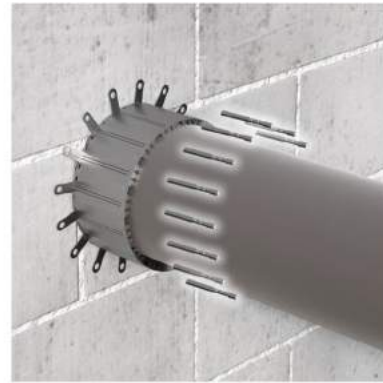
2. Wrap the pipe with **INTU FR WRAP L** ensuring an appropriate number of wraps.



3. Cut the appropriate length of the steel casing.



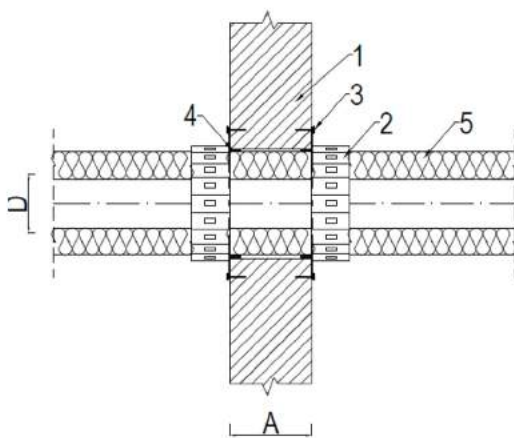
4. Put the collar on the intumescent tape already placed on the pipe.



5. Attach the collar to the partition using steel screws.

## → SOLUTION DETAILS

### PROTECTION IN WALLS



**Fig. 1. Wall penetration**

D – pipe diameter

A – wall thickness

1 – rigid wall ( $A \geq 150$  mm)

2 – **INTU FR COLLAR L**, installed on both sides of the wall

3 – steel screw

4 – a gap around the collar, on both sides of the partition, filled with intumescent acrylic mastic

5 – non-flammable pipe insulated with synthetic rubber

\* - number of wraps according to TDS **INTU FR WRAP L**

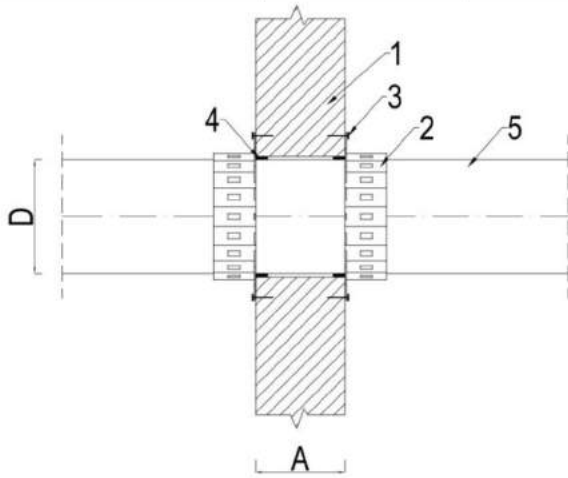
# INTU FR COLLAR L

Intumescent pipe collar roll

TDS Technical Data Sheet

**INTUSEAL**  
passive fire protection manufacturer

## → SOLUTION DETAILS (continuation)



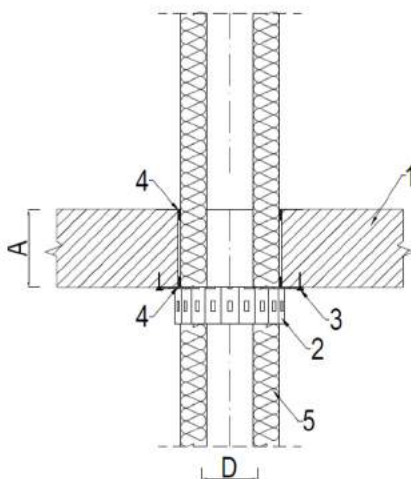
**Fig. 3. Wall penetration**

D – pipe diameter  
A – wall thickness

- 1 – rigid wall ( $A \geq 150$  mm)
- 2 – INTU FR COLLAR L, installed on both sides of the wall
- 3 – steel screw
- 4 – a gap around the collar, on both sides of the partition, filled with intumescent acrylic mastic
- 5 – flammable pipe

\* - number of wraps according to TDS INTU FR COLLAR

## PROTECTION IN FLOORS

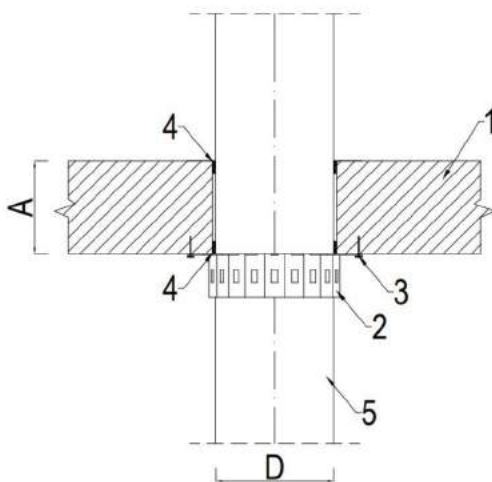


**Fig. 2. Floor penetration**

D – pipe diameter  
A – wall thickness

- 1 – floor ( $A \geq 150$  mm)
- 2 – INTU FR COLLAR L, installed from the bottom of the floor
- 3 – steel screw
- 4 – a gap around the collar, on both sides of the partition, filled with intumescent acrylic mastic
- 5 – non-flammable pipe insulated with synthetic rubber

\* - number of wraps according to TDS INTU FR WRAP L



**Fig. 4. Floor penetration**

D – pipe diameter  
A – wall thickness

- 1 – floor ( $A \geq 150$  mm)
- 2 – INTU FR COLLAR L, installed from the bottom of the floor
- 3 – steel screw
- 4 – a gap around the collar, on both sides of the partition, filled intumescent acrylic mastic
- 5 – flammable pipe

\* - number of wraps according to TDS INTU FR COLLAR



# INTU FR COLLAR L

Intumescent pipe collar roll

TDS Technical Data Sheet

**INTUSEAL**  
passive fire protection manufacturer

## → FIRE RESISTANCE CLASSIFICATION

COLLAR	DN	Insulation thickness	Wall	Floor
STEEL +SYNTHETIC RUBBER	42,4mm	9mm	EI240	EI240
		50mm	EI120	EI120
	88,9mm	9mm	EI90	EI120
		23mm	EI120	EI90
		50mm	EI90	EI120
	159,0mm	9mm	-	EI120
50mm		-	EI90	
COPPER +SYNTHETIC RUBBER	15,0mm	9mm	EI240	EI120
		50mm	EI240	EI90
	54,0mm	9mm	EI60	EI120
		50mm	-	EI90

## → PRODUCT DESCRIPTION

Internal sleeve **INTU FR INSLEEVE** is composed of a flexible insert made of graphite-based material that swells under the influence of temperature above 140°C and a metal ring-shaped cartridge made of 1.0 mm thick sheet metal protected with anti-corrosion coating.

## → APPLICATION

**INTU FR INSLEEVE** is used for fire protection of penetrations with plastic pipes (PVC, PP, PE, HDPE) running through fire partitions. For installation inside the pipe.

### Rigid walls:

The wall must be at least 150mm thick and have concrete, cellular concrete structure or masonry structure, with a minimum density of 600kg/m<sup>3</sup>

### Rigid floors:

The floor must be at least 150mm thick and have concrete, cellular concrete structure or masonry structure, with a minimum density of 1700kg/m<sup>3</sup>

## → INSTALLATION METHOD

1. Adjust the size of the sleeve to the pipeline diameter.
2. Slide the sleeve into the pipeline.
3. Fill holes and material losses around the pipe with cement mortar.

## → AVAILABILITY, DIMENSIONS AND FIRE RESISTANCE CLASS

Type (outer diameter)	Art. No.	Intumescent material (width x thickness / number of inserts)	EI
<b>INTU FR INSLEEVE 110</b>	ININS110	60mm x 2mm / 3	120
<b>INTU FR INSLEEVE 125</b>	ININS125	60mm x 2mm / 5	120
<b>INTU FR INSLEEVE 160</b>	ININS160	60mm x 2mm / 5	120



## → COMPLIANCE

- LZP16-02580/16/Z00NZE/e
- LZP06-01993/17/Z00NZE/e
- LZP08-01993/17/Z00NZE/e
- LZP42-02580/16/Z00NZE/e
- Declaration of Performance DoP 4/2019

## → TRANSPORT AND STORAGE

**INTU FR INSLEEVE** has no negative impact on the environment. In the case of long-term storage, it is recommended to keep it in enclosed spaces. The storage period does not affect the product's properties.

## → SOLUTION DETAILS

### PROTECTION OF FLAMMABLE PIPES

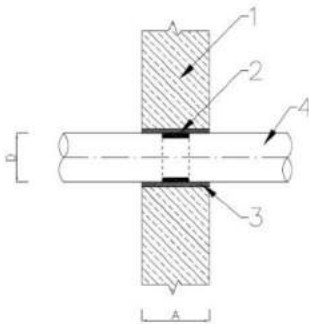


Fig. 1. Wall penetration

- 1 – rigid wall (A ≥ 150 mm)
- 2 – **INTU FR INSLEEVE** intumescent inner collar installed in the wall axis
- 3 – cement mortar filling
- 4 – flammable pipe

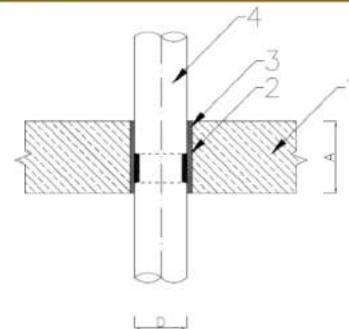


Fig. 2. Floor penetration

- 1 – rigid floor (A ≥ 150 mm)
- 2 – **INTU FR INSLEEVE** intumescent inner collar installed 1cm from the floor bottom
- 3 – cement mortar filling
- 4 – flammable pipe



# INTU FR MASTIC

Intumescent acrylic mastic

TDS Technical Data Sheet

**INTUSEAL**  
passive fire protection manufacturer

## → PRODUCT DESCRIPTION

**INTU FR MASTIC** is an acrylic mastic designed to prevent spreading of fire, smoke and gases through openings in fire rated walls and floors. **INTU FR MASTIC** expands when it is subjected to fire and close openings around pipes or cables by creating tight barrier for fire, smoke and gas. Mass effective fills the gaps around the installation, ensuring the integrity and insulation of fire resistance class EI 120 and EI 240 (details according to compliance documents).

## → APPLICATION

**INTU FR MASTIC** is designed for:

- fire protection of penetrations with non-flammable pipes in floors or walls
- fire protection of single electric cables / bundle of cables in floors and walls
- installation / sealing of intumescent ventilation grilles **INTU FR GRILLE**

## → INSTALLATION METHOD

### 1. PREPARATION

- a. Do not use **INTU FR MASTIC** if the ambient temperature is below 5°C.
- b. Clean the surfaces thoroughly from grease and other contaminants before applying the mastic. The **INTU FR MASTIC** should not be used on substrates that exude oils, softeners or solvents, greases and other contaminants

### 2. APPLICATION

- a. Insert a mineral wool primer into the hole with density of 40 kg/m<sup>3</sup> to a depth according table 1.
- b. Fill the gap with **INTU FR MASTIC** to the required depth.
- c. Insulate the pipe from the barrier with mineral wool with a density of min 37 kg/m<sup>3</sup> length and thickness indicated in table 1.

## → TRANSPORT AND STORAGE

Store in dry and cool conditions at temperatures between + 5°C and + 25°C.  
Shelf life as specified on the product label.

## → FIRE RESISTANCE CLASSIFICATION

TYPE	Diameter	EI wall	EI floor
Steel pipe	≤ 42,4 mm	EI 240	EI 240
	≤ 108,0 mm	EI 180	EI 120
	≤ 159,0 mm	EI 120	EI 120
	≤ 219,1 mm	EI 60	-
Copper pipe	≤ 6,0 mm	EI 240	EI 180
	≤ 54,0 mm	EI 180	EI 90
	≤ 88,9 mm	EI 120	-
Electric cable	Single cable ≤ Ø 21 mm	EI 240	EI 120
	Cables in bundle ≤ Ø 100mm	EI 90	EI 120



## → AVAILABILITY

TYPE	Art. No
310ml	INFRM310
600ml	INFRM600

## → COMPLIANCE

Fire classification 01367/18/N00NZP  
European Technical Assessment 19/0038  
Declaration of Performance DoP 8/2019

## → SOLUTION DETAILS - NON FLAMMABLE PIPES

<p><b>Fig. 1</b></p> <p>1 – wall (A – thickness of min 150mm)                  2 – non-flammable pipe;                  3 – mineral wool insulation with a density of min 37 kg/m<sup>3</sup>, length and thickness according table 1                  4 – INTU FR MASTIC (details according table 1)                  5 – mineral wool density of min. 40 kg/m<sup>3</sup>, dimension in according table 1</p>	<p><b>Fig. 2</b></p> <p>1 – floor (A – thickness min 150mm)                  2 – non-flammable;                  3 – mineral wool insulation with a density of min 37 kg/m<sup>3</sup>, length and thickness according table 1                  4 – INTU FR MASTIC (details according table 1)                  5 – mineral wool density of min. 40 kg/m<sup>3</sup>, dimension in according table 1</p>

Table.1.

Diameter	Material	Filling	Insulation*	INTU FR MASTIC
≤ 42,4 mm	steel	Mineral wool Density of min. 40kg/m <sup>3</sup> Depth: 15mm	Thickness: 30mm Length: 250mm	Width: 10mm Depth: 15mm
≤ 108,0 mm	steel		Thickness: 50mm Length: 250mm	
< 159,0 mm	steel	Mineral wool Density of min. 40kg/m <sup>3</sup> Depth: in all partition	Thickness 50mm Length: 650mm	Width: 25mm Depth:: 20mm
≤ 219,1 mm	steel		Thickness 30mm Length: 500mm	Width: 25mm Depth: 20mm
≤ 6,0 mm	copper		Thickness 30mm Length: 500mm	
≤ 54,0 mm	copper		Thickness 60mm Length: 700mm	
≤ 88,9 mm	copper			

\* Mineral wool insulation with aluminum wrapper, density 37 kg/m<sup>3</sup>, length L from the partition



## → SOLUTION DETAILS - ELECTRIC CABLES

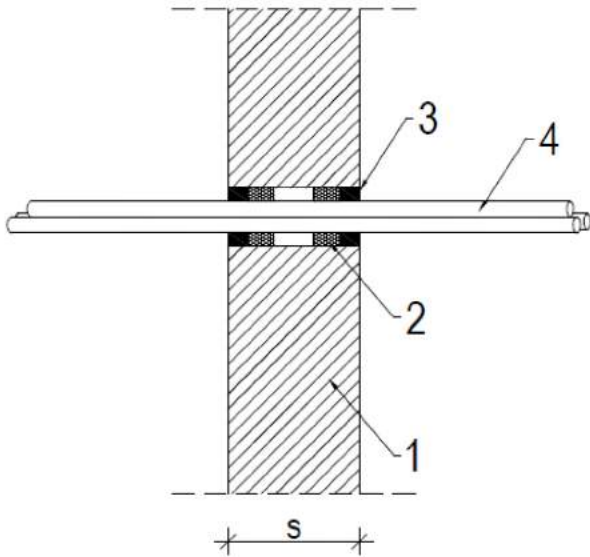


Fig. 3

- 1 – wall (S – thickness of min 150mm)
- 2 – mineral wool density of min. 40 kg/m<sup>3</sup>, depth 15mm
- 3 – INTU FR MASTIC depth min 20mm
- 4 – single electric cable ≤ Ø 21mm or cables in bundle ≤ Ø 100mm

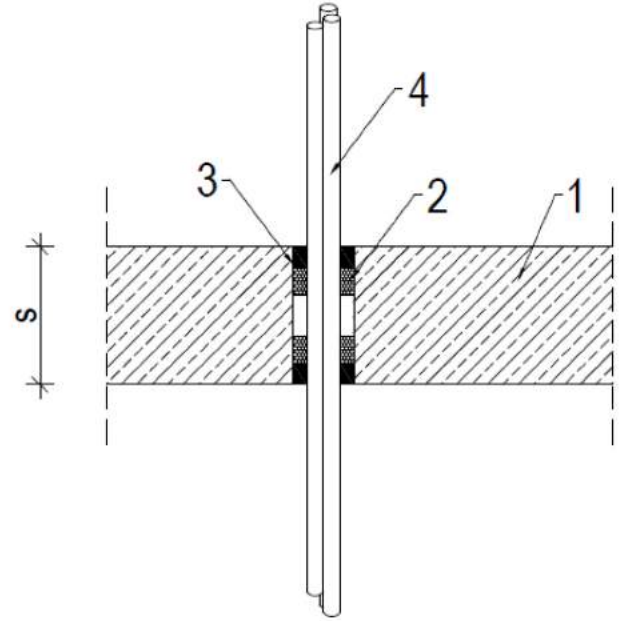


Fig. 4

- 1 – floor (S – thickness of min 150mm)
- 2 – mineral wool density of min. 40 kg/m<sup>3</sup>, depth 15mm
- 3 – INTU FR MASTIC depth min 20mm
- 4 – single electric cable ≤ Ø 21mm or cables in bundle ≤ Ø 100mm

# INTU FR COAT A

Fire rated ablative coat

TDS Technical Data Sheet

**INTUSEAL**  
passive fire protection manufacturer

## → PRODUCT DESCRIPTION

Firestop ablative paint **INTU FR COAT A** is a one-component product designed for sealing fire protection penetrations and expansion joints with fire resistance class up to **EI 240**. Under fire conditions and the influence of high temperature, endothermic reactions take place in the product. The paint absorbs heat to a large extent, delaying the impact of fire on structural elements. The product is used in combination with a mineral wool board with a density of min. 150kg/m<sup>3</sup> and a minimum thickness of 60mm for penetration seals and with density of min. 50kg/m<sup>3</sup> for linear joint. The ready-made/painted firestop boards **INTU FR BOARD A** are also available for sale.

## → APPLICATION

**INTU FR COAT A** is designed for:

- fire protection of penetrations with single non-flammable pipes or groups of non-flammable pipes in floors or walls
- protection of expansion joints in floors or walls
- fire protection of electric cables combined with intumescent paint **INTU FR COAT I** in wall

### Rigid walls:

The wall must be at least 150mm thick and have concrete, cellular concrete structure or masonry structure, with a minimum density of 600kg/m<sup>3</sup>

### Rigid floors:

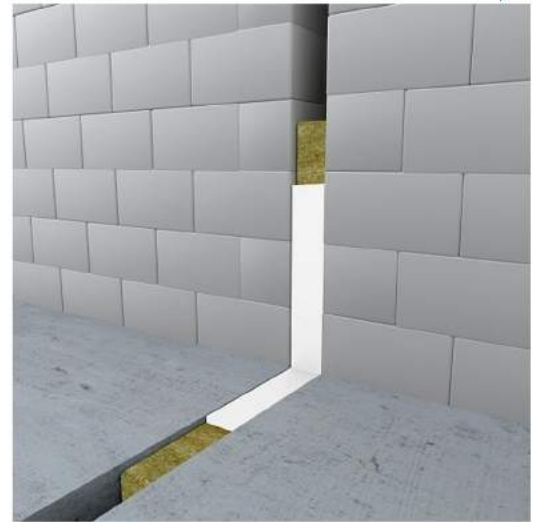
The floor must be at least 150mm thick and have concrete, cellular concrete structure or masonry structure, with a minimum density of 1700kg/m<sup>3</sup>

## → INSTALLATION METHOD

1. Prior to sealing, clean the surfaces of the hole and system components from grease and other contaminants thoroughly.
2. Cut the mineral wool board with a density of min 150kg/m<sup>3</sup> to the correct size. In the case of linear joint put loose mineral wool density of min. 50kg/m<sup>3</sup> or mineral wool board in gap of 100mm depth.
3. Place the wool board in the hole/gap.
4. In the case of non-flammable pipes:
  - a) mineral wool insulation with a density of min 37kg/m<sup>3</sup> should be placed (for exact parameters see Table 1)
  - b) cover a mineral wool board and a part of the insulation with **INTU FR COAT A** according to the guidelines in the drawings.
5. In the case of expansion joints, cover the mineral wool board with **INTU FR COAT A** ablative paint on one side of the partition. Prepare a partition overlap min 5mm.

## → TRANSPORT AND STORAGE

Store in dry and cool conditions at temperatures between + 5°C and + 25°C.  
Shelf life as specified on the product label.



## → AVAILABILITY

TYPE	Art. Nr.
8L (11,68 kg)	INCA8L

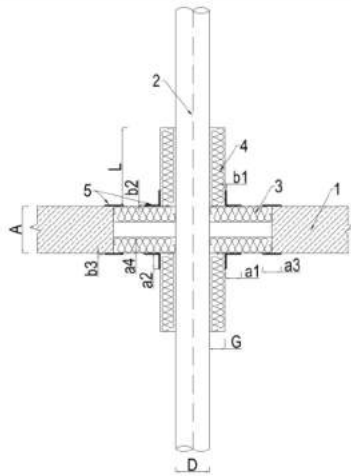
## → COMPLIANCE

Fire classification 01367/18/N00NZP  
Fire classification 01307/18/Z00NZP  
European Technical Assessment 19/0037  
European Technical Assessment 19/0038  
Declaration of Performance nr DoP 5/2019



## ➔ SOLUTION DETAILS

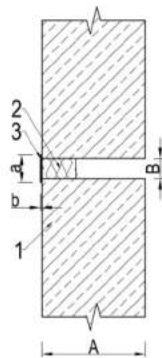
PROTECTION OF NON-FLAMMABLE PIPES	
	<p><b>Fig. 1. Wall penetration (continuous insulation)</b></p> <ol style="list-style-type: none"> <li>1 – a wall with a thickness of <math>A \geq 150\text{mm}</math> and density no less than <math>600\text{ kg/m}^3</math></li> <li>2 – non-flammable pipe</li> <li>3 – mineral wool board with a density of min. <math>150\text{ kg/m}^3</math>, coated with ablative paint with a dry layer thickness of <math>1\text{mm}</math></li> <li>4 – mineral wool insulation with a density of min. <math>37\text{ kg/m}^3</math>, length <math>L</math> and thickness <math>G</math> according to Table 1</li> <li>5 – <b>INTU FR COAT A</b> ablative paint, <math>a1 \geq 50\text{mm}</math>; <math>a2 \geq 50\text{mm}</math>; <math>a3 \geq 20\text{mm}</math>; <math>a4 \geq 60\text{mm}</math>; <math>b1 \geq 0,6\text{mm}</math>; <math>b2 \geq 0,6\text{mm}</math>; <math>b3 \geq 0,6\text{mm}</math></li> </ol>
	<p><b>Fig. 2. Wall penetration (non-continuous insulation)</b></p> <ol style="list-style-type: none"> <li>1 – a wall with a thickness of <math>A \geq 150\text{mm}</math> and density no less than <math>600\text{ kg/m}^3</math></li> <li>2 – non-flammable pipe</li> <li>3 – mineral wool board with a density of min. <math>150\text{ kg/m}^3</math>, coated with ablative paint with a dry layer thickness of <math>1\text{mm}</math></li> <li>4 – mineral wool insulation with a density of min. <math>37\text{ kg/m}^3</math>, length <math>L</math> and thickness <math>G</math> according to Table 1</li> <li>5 – <b>INTU FR COAT A</b> ablative paint, <math>a1 \geq 50\text{mm}</math>; <math>a2 \geq 50\text{mm}</math>; <math>a3 \geq 20\text{mm}</math>; <math>a4 \geq 60\text{mm}</math>; <math>b1 \geq 0,6\text{mm}</math>; <math>b2 \geq 0,6\text{mm}</math>; <math>b3 \geq 0,6\text{mm}</math></li> </ol>
	<p><b>Fig. 3. Floor penetration (continuous insulation)</b></p> <ol style="list-style-type: none"> <li>1 – a floor with a thickness of <math>A \geq 150\text{mm}</math> and density no less than <math>1700\text{ kg/m}^3</math></li> <li>2 – non-flammable pipe</li> <li>3 – mineral wool board with a density of min. <math>150\text{ kg/m}^3</math>, coated with ablative paint with a dry layer thickness of <math>1\text{mm}</math></li> <li>4 – mineral wool insulation with a density of min. <math>37\text{ kg/m}^3</math>, length <math>L</math> and thickness <math>G</math> according to Table 1</li> <li>5 – <b>INTU FR COAT A</b> ablative coat, <math>a1 \geq 50\text{mm}</math>; <math>a2 \geq 50\text{mm}</math>; <math>a3 \geq 20\text{mm}</math>; <math>a4 \geq 60\text{mm}</math>; <math>b1 \geq 0,6\text{mm}</math>; <math>b2 \geq 0,6\text{mm}</math>; <math>b3 \geq 0,6\text{mm}</math></li> </ol>



**Fig. 4. Floor penetration (non-continuous insulation)**

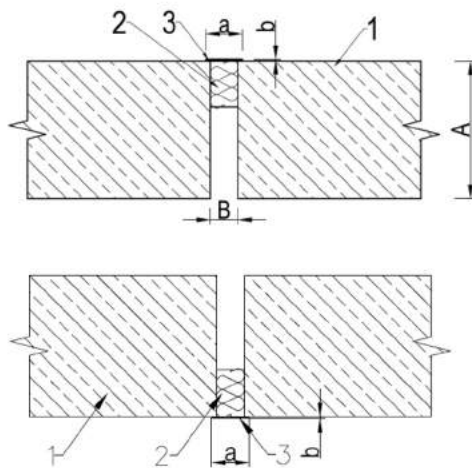
- 1 – a floor with a thickness of  $A \geq 150\text{mm}$  and density no less than  $1700 \text{ kg/m}^3$
- 2 – non-flammable pipe
- 3 – mineral wool board with a density of min.  $150 \text{ kg/m}^3$ , coated with ablative paint with a dry layer thickness of  $1\text{mm}$
- 4 – mineral wool insulation with a density of min.  $37 \text{ kg/m}^3$ , length  $L$  and thickness  $G$  according to Table 1
- 5 – **INTU FR COAT A** ablative coat,  
 $a1 \geq 50\text{mm}$ ;  $a2 \geq 50\text{mm}$ ;  $a3 \geq 20\text{mm}$ ;  $a4 \geq 60\text{mm}$ ;  
 $b1 \geq 0,6\text{mm}$ ;  $b2 \geq 0,6\text{mm}$ ;  $b3 \geq 0,6\text{mm}$

## PROTECTION OF FIRE RATED EXPANSION JOINTS



**Fig. 1. Expansion joint in a wall**

- 1 – a wall with a thickness of  $A \geq 150\text{mm}$  and density no less than  $600 \text{ kg/m}^3$ , the gap with a thickness of  $B \leq 100\text{mm}$
- 2 – mineral wool with a density of min.  $50 \text{ kg/m}^3$ , min depth  $100\text{mm}$ , coated on one side with **INTU FR COAT A**, with a dry film thickness of  $1\text{mm}$
- 3 – **INTU FR COAT A** ablative paint, with a thickness of  $b \geq 0,60\text{mm}$ , overlap on the partition of min.  $5\text{mm}$



**Fig. 2. Expansion joint in a floor**

- 1 – a floor with a thickness of  $A \geq 150\text{mm}$  and density no less than  $1700 \text{ kg/m}^3$ , gap with a thickness of  $B \leq 100\text{mm}$
- 2 – (installation from the bottom or top of the floor) mineral wool with a density of min.  $50 \text{ kg/m}^3$ , minimum depth  $100\text{mm}$ , coated on one side with **INTU FR COAT A**, with a dry film thickness of  $1\text{mm}$
- 3 – **INTU FR COAT A** ablative paint, with a thickness of  $b \geq 0,60\text{mm}$ , overlap on the partition of min.  $5\text{mm}$



**Table 1. Parameters for protection of non-flammable pipes.**

Diameter	Material	Filling	Insulation*
≤ 42,4 mm	steel	2 x mineral wool board with a density of min. 150kg/m <sup>3</sup> , 60mm thick, coated on one side with <b>INTU FR COAT A</b>	Thickness G: 30mm; Length L: 250mm
≤ 108,0 mm	steel		Thickness G: 50mm; Length L: 250mm
≤ 159,0 mm	steel		Thickness G: 50mm; Length L: 650mm
≤ 219,0 mm	steel		Thickness G: 50mm; Length L: 650mm
≤ 6,0 mm	copper		Thickness G: 30mm; Length L: 500mm
≤ 54,0 mm	copper		Thickness G: 30mm; Length L: 500mm
≤ 88,9 mm	copper		Thickness G: 60mm; Length L: 700mm

\* Mineral wool **insulation** with aluminium wrapper, density 37 kg/m<sup>3</sup>, length L from the partition

## → FIRE RESISTANCE CLASSIFICATION\_PENETRATION SEALS

TYPE	INSULATION	DN	EI WALL	EI FLOOR
STEEL PIPES	continuous	≤ 42,4 mm	EI 120	EI 120
		≤ 108,0 mm	EI 120	EI 120
		≤ 159,0 mm	EI 120	EI 120
		≤ 219,0 mm	EI 120	-
	Non-continuous	≤ 42,4 mm	EI 120	EI 120 (EI120*)
		≤ 108,0 mm	EI 120	EI 120 (EI60*)
		≤ 159,0 mm	EI 120	EI 120
		≤ 219,0 mm	EI 120	EI 120
COOPER PIPES	continuous	≤ 6,0 mm	EI 120	EI 240
		≤ 54,0 mm	EI 60	EI 180
		≤ 88,9 mm	EI 60	EI 90
	Non-continuous	≤ 6,0 mm	EI 120	EI 240
		≤ 54,0 mm	-	EI 60
		≤ 88,9 mm	-	EI60

\*fire resistance using a single mineral wool board

## → FIRE RESISTANCE CLASSIFICATION\_LINEAR JOINTS

GAP [mm]	EI WALL Vertical	EI WALL Horizontal	EI FLOOR
≤ 100mm	EI 240	EI 120	EI 240

# INTU FR BOARD A

Fire rated ablative board

TDS Technical Data Sheet

**INTUSEAL**  
passive fire protection manufacturer

## → PRODUCT DESCRIPTION

Firestop board **INTU FR BOARD A** is composed of a mineral wool board with a density of 150kg/m<sup>3</sup> and a thickness of 60mm, covered on one side with ablative paint **INTU FR COAT A**. The product set is designed for sealing fire protection penetrations and preparing fire expansion joints with fire resistance class up to **EI 240**. In the fire conditions, under the influence of high temperature, endothermic reactions take place in the product. The paint absorbs heat, significantly delaying the impact of fire on structural components.

## → APPLICATION

**INTU FR BOARD** is used for:

- fire protection of penetrations with single non-flammable pipes or groups of non-flammable pipes in floors or walls
- protection of expansion joints in floors or walls
- fire protection of electric cables combined with intumescent paint **INTU FR COAT I** in wall

### Rigid walls:

The wall must be at least 150mm thick and have concrete, cellular concrete structure or masonry structure, with a minimum density of 600kg/m<sup>3</sup>

### Rigid floors:

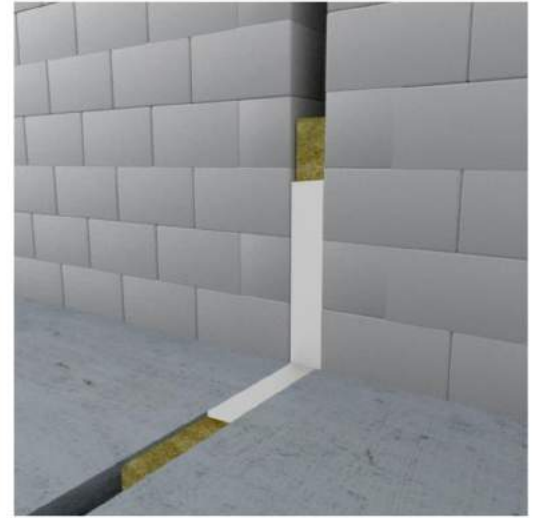
The floor must be at least 150mm thick and have concrete, cellular concrete structure or masonry structure, with a minimum density of 1700kg/m<sup>3</sup>

## → INSTALLATION METHOD

1. Prior to sealing, clean the hole surface and system components from grease and other contaminants thoroughly.
2. Cut the **INTU FR BOARD A** to the correct size.
3. Place the **INTU FR BOARD A** in the hole/gap.
4. In the case of non-flammable pipes:
  - a) mineral wool insulation with a density of min 50kg/m<sup>3</sup> should be placed (for exact parameters see Table 1)
  - b) all gaps between system components and the junction of the partition with mineral wool should be filled with **INTU FR COAT A**.
5. In the case of expansion joints, cover the mineral wool board with **INTU FR COAT A** ablative paint on one side of the partition. Prepare a partition overlap min 5mm.

## → TRANSPORT AND STORAGE

Store in dry and cool conditions at temperatures between + 5°C and + 25°C. Shelf life as specified on the product label.



## → AVAILABILITY

TYPE	Art. No.
INTU FR BOARD A 60mm 1-S	INBA601S

## → COMPLIANCE

Fire classification 01367/18/N00NZP  
Fire classification 01307/18/Z00NZP  
European Technical Assessment 19/0037  
European Technical Assessment 19/0038  
Declaration of Performance nr DoP 6/2019



## → SOLUTION DETAILS

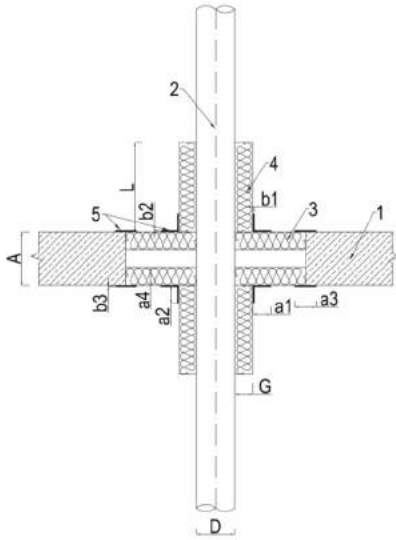
PROTECTION OF NON-FLAMMABLE PIPES	
	<p style="text-align: center;"><b>Fig. 1. Wall penetration (continuous insulation)</b></p> <ol style="list-style-type: none"> <li>1 – a wall with a thickness of <math>A \geq 150\text{mm}</math> and density no less than <math>600 \text{ kg/m}^3</math></li> <li>2 – non-flammable pipe</li> <li>3 – <b>INTU FR BOARD A</b></li> <li>4 – mineral wool insulation with a density of min. <math>37 \text{ kg/m}^3</math>, length <math>L</math> and thickness <math>G</math> according to Table 1</li> <li>5 – <b>INTU FR COAT A</b> ablative paint, <math>a1 \geq 50\text{mm}</math>; <math>a2 \geq 50\text{mm}</math>; <math>a3 \geq 20\text{mm}</math>; <math>a4 \geq 60\text{mm}</math>; <math>b1 \geq 0,6\text{mm}</math>; <math>b2 \geq 0,6\text{mm}</math>; <math>b3 \geq 0,6\text{mm}</math></li> </ol>
	<p style="text-align: center;"><b>Fig. 2 Wall penetration (non-continuous insulation)</b></p> <ol style="list-style-type: none"> <li>1 – a wall with a thickness of <math>A \geq 150\text{mm}</math> and density no less than <math>600 \text{ kg/m}^3</math></li> <li>2 – non-flammable pipe</li> <li>3 – <b>INTU FR BOARD A</b></li> <li>4 – mineral wool insulation with a density of min. <math>37 \text{ kg/m}^3</math>, length <math>L</math> and thickness <math>G</math> according to Table 1</li> <li>5 – <b>INTU FR COAT A</b> ablative paint, <math>a1 \geq 50\text{mm}</math>; <math>a2 \geq 50\text{mm}</math>; <math>a3 \geq 20\text{mm}</math>; <math>a4 \geq 60\text{mm}</math>; <math>b1 \geq 0,6\text{mm}</math>; <math>b2 \geq 0,6\text{mm}</math>; <math>b3 \geq 0,6\text{mm}</math></li> </ol>
	<p style="text-align: center;"><b>Fig. 3 Floor penetration (continuous insulation)</b></p> <ol style="list-style-type: none"> <li>1 – a floor with a thickness of <math>A \geq 150\text{mm}</math> and density no less than <math>1700 \text{ kg/m}^3</math></li> <li>2 – non-flammable pipe</li> <li>3 – <b>INTU FR BOARD A</b></li> <li>4 – mineral wool insulation with a density of min. <math>37 \text{ kg/m}^3</math>, length <math>L</math> and thickness <math>G</math> according to Table 1</li> <li>5 – <b>INTU FR COAT A</b> ablative paint, <math>a1 \geq 50\text{mm}</math>; <math>a2 \geq 50\text{mm}</math>; <math>a3 \geq 20\text{mm}</math>; <math>a4 \geq 60\text{mm}</math>; <math>b1 \geq 0,6\text{mm}</math>; <math>b2 \geq 0,6\text{mm}</math>; <math>b3 \geq 0,6\text{mm}</math></li> </ol>

# INTU FR BOARD A

Fire rated ablative board

TDS Technical Data Sheet

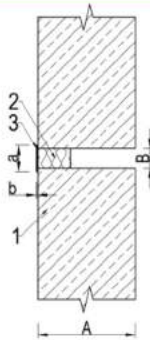
**INTUSEAL**  
passive fire protection manufacturer



**Fig. 4 Floor penetration  
(non-continuous insulation)**

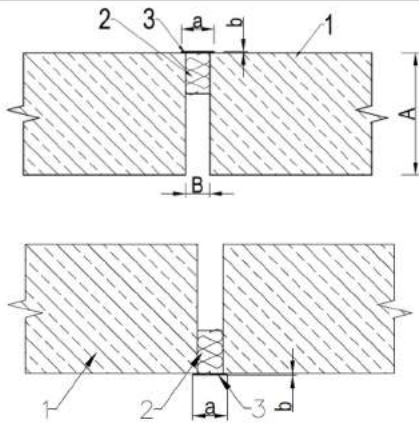
- 1 – a floor with a thickness of  $A \geq 150\text{mm}$  and density no less than  $1700 \text{ kg/m}^3$
- 2 – non-flammable pipe
- 3 – **INTU FR BOARD A**
- 4 – mineral wool insulation with a density of min.  $37 \text{ kg/m}^3$ , length  $L$  and thickness  $G$  according to Table 1
- 5 – **INTU FR COAT A** ablative paint,  
 $a1 \geq 50\text{mm}$ ;  $a2 \geq 50\text{mm}$ ;  $a3 \geq 20\text{mm}$ ;  $a4 \geq 60\text{mm}$ ;  
 $b1 \geq 0,6\text{mm}$ ;  $b2 \geq 0,6\text{mm}$ ;  $b3 \geq 0,6\text{mm}$

## PROTECTION OF FIRE RATED EXPANSION JOINT



**Fig. 1 Expansion joint in a wall**

- 1 – a wall with a thickness of  $A \geq 150\text{mm}$  and density no less than  $600 \text{ kg/m}^3$ , gap with a width of  $B \leq 100\text{mm}$
- 2 – **INTU FR BOARD A**
- 3 – **INTU FR COAT A** ablative paint, at the joint and min 5mm at the partition, the thickness of the layer  $b \geq 0.60\text{mm}$



**Fig. 2 Expansion joint in a floor**

- 1 – a floor with a thickness of  $A \geq 150\text{mm}$  and density no less than  $1700 \text{ kg/m}^3$ , gap with a width of  $B \leq 100\text{mm}$
- 2 – **INTU FR BOARD A**, installation from the top or bottom of the floor
- 3 – **INTU FR COAT A** ablative paint, at the joint and min 5mm at the partition, the thickness of the layer  $b \geq 0.60\text{mm}$



# INTU FR BOARD A

Fire rated ablative board

TDS Technical Data Sheet

Table 1. Parameters for protection of non-flammable pipes.

Diameter	Material	Filling	Insulation*
≤ 42,4 mm	steel	2 x mineral wool board with a density of min. 150kg/m <sup>3</sup> , 60mm thick, coated on one side with <b>INTU FR COAT A</b>	Thickness G: 30mm; Length L: 250mm
≤ 108,0 mm	steel		Thickness G: 50mm; Length L: 250mm
≤ 159,0 mm	steel		Thickness G: 50mm; Length L: 650mm
≤ 219,0 mm	steel		Thickness G: 50mm; Length L: 650mm
≤ 6,0 mm	copper		Thickness G: 30mm; Length L: 500mm
≤ 54,0 mm	copper		Thickness G: 30mm; Length L: 500mm
≤ 88,9 mm	copper		Thickness G: 60mm; Length L: 700mm

\* Mineral wool insulation with aluminum wrapper, density 37 kg/m<sup>3</sup>, length L from the partition

## → FIRE RESISTANCE CLASSIFICATION\_PENETRATION SEALS

TYPE	INSULATION	DN	EI WALL	EI FLOOR
STEEL PIPES	continuous	≤ 42,4 mm	EI 120	EI 120
		≤ 108,0 mm	EI 120	EI 120
		≤ 159,0 mm	EI 120	EI 120
		≤ 219,0 mm	EI 120	-
	Non-continuous	≤ 42,4 mm	EI 120	EI 120 (EI120*)
		≤ 108,0 mm	EI 120	EI 120 (EI60*)
		≤ 159,0 mm	EI 120	EI 120
		≤ 219,0 mm	EI 120	EI 120
COOPER PIPES	continuous	≤ 6,0 mm	EI 120	EI 240
		≤ 54,0 mm	EI 60	EI 180
		≤ 88,9 mm	EI 60	EI 90
	Non-continuous	≤ 6,0 mm	EI 120	EI 240
		≤ 54,0 mm	-	EI 60
		≤ 88,9 mm	-	EI60

\*fire resistance using a single mineral wool board

## → FIRE RESISTANCE CLASSIFICATION\_LINEAR JOINTS

GAP [mm]	EI WALL Vertical	EI WALL Horizontal	EI FLOOR
≤ 100mm	EI 240	EI 120	EI 240

# INTU FR COAT I

Fire rated intumescent coat

TDS Technical Data Sheet

**INTUSEAL**  
passive fire protection manufacturer

## → PRODUCT DESCRIPTION

Firestop ablative paint **INTU FR COAT I** is a one-component intumescent paint designed for sealing fire protection penetrations with non-flammable pipes and electric cables. The coating made with this paint swells under the influence of temperature, creating a protective layer on the protected surface.

The paint protects the system elements in penetrations up to fire resistance class of **EI 240**. (details according to reference documents)

## → APPLICATION

**INTU FR COAT I** is intended for the protection of non-flammable pipes in fire partition floors and walls and electric cables / cable trays in wall.

### Rigid walls:

The wall must be at least 150mm thick and have concrete, cellular concrete structure or masonry structure, with a minimum density of 600kg/m<sup>3</sup>

### Rigid floors:

The floor must be at least 150mm thick and have concrete, cellular concrete structure or masonry structure, with a minimum density of 1700kg/m<sup>3</sup>

### Flexible walls:

The wall must be at least 125mm thick and have a steel profile structure covered on both sides with a minimum of 2 layers of boards with a thickness of 12.5mm.

## → INSTALLATION METHOD

1. Prior to sealing, clean the surfaces of the hole and system components from grease and other contaminants thoroughly.
2. Mix the paint well before use. The paint does not require thinning but you can add a water.
3. The space around the pipe should be filled with cement mortar or mineral wool, the space around cable/cable trays should be filled mineral board INTU FR BOARD A (or mineral wool board density 150 kg/m<sup>3</sup>) flush with the face of the partition.
4. Cover the pipe with **INTU FR COAT I** with a layer of appropriate thickness and length according to Table 1.
5. Cover the hole filling (mineral wool/cement mortar) with **INTU FR COAT A** ablative paint, overlapping the surface of the partition according to Table 1.



## → AVAILABILITY

TYPE	Art. No.
1L (1,28 kg)	INC11L
8L (10,24 kg)	INC18L

## → TRANSPORT AND STORAGE

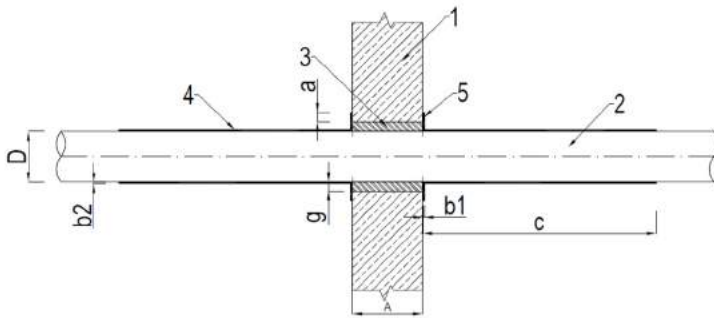
Store in dry and cool conditions at temperatures between + 5°C and + 25°C. Shelf life as specified on the product label.

## → COMPLIANCE

Fire classification 01367/18/N00NZP  
European Technical Assessment 19/0038  
Declaration of Performance nr DoP 7/2019

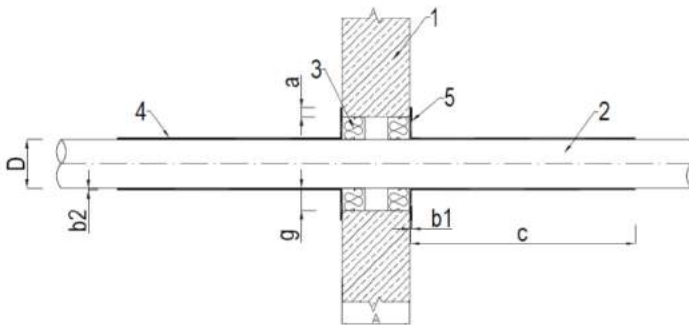


➔ SOLUTION DETAILS



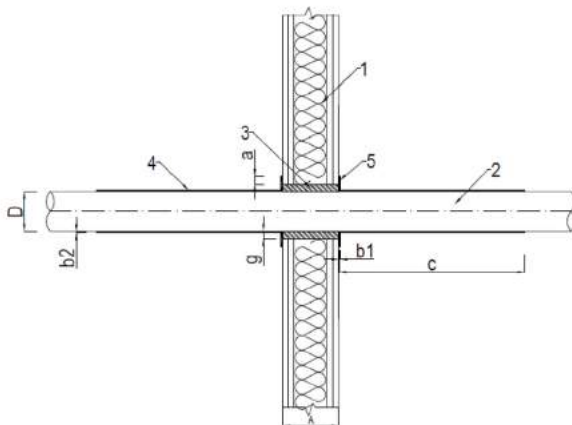
**Fig. 1. Penetration with mortar filling**

- 1 – a partition (wall or floor) with a thickness of  $A \geq 150\text{mm}$
- 2 – non-flammable pipe
- 3 – concrete mortar filling
- 4 – INTU FR COAT I intumescent paint  $b2 \geq 1\text{mm}$ ;  $c \geq 500\text{mm}$ ;
- 5 – INTU FR COAT I intumescent paint,  $a \geq 10\text{mm}$ ;  $b1 \geq 1\text{mm}$ ;



**Fig. 2. Transition with mineral wool filling**

- 1 – a partition (wall or floor) with a thickness of  $A \geq 150\text{mm}$
- 2 – non-flammable pipe
- 3 – mineral wool filling with a density of min.  $150 \text{ kg/m}^3$ , thickness min.  $60 \text{ mm}$ ,  $g \leq 50\text{mm}$
- 4 – INTU FR COAT I intumescent paint  $b2 \geq 1\text{mm}$ ;  $c \geq 500\text{mm}$ ;
- 5 – INTU FR COAT A ablative paint,  $a \geq 10\text{mm}$ ;  $b1 \geq 1\text{mm}$ ;



**Fig. 3. Penetration with mortar filling**

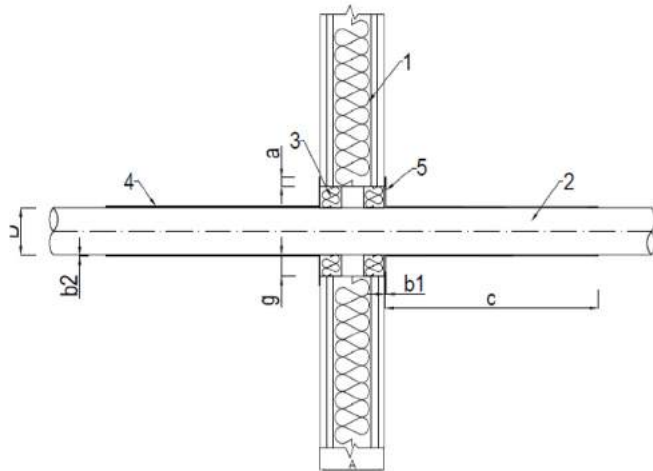
- 1 – flexible wall, thickness of  $A \geq 125\text{mm}$
- 2 – non-flammable pipe
- 3 – concrete mortar filling
- 4 – INTU FR COAT I intumescent paint  $b2 \geq 1\text{mm}$ ;  $c \geq 500\text{mm}$ ;
- 5 – INTU FR COAT I intumescent paint,  $a \geq 10\text{mm}$ ;  $b1 \geq 1\text{mm}$ ;

# INTU FR COAT I

Fire rated intumescent coat

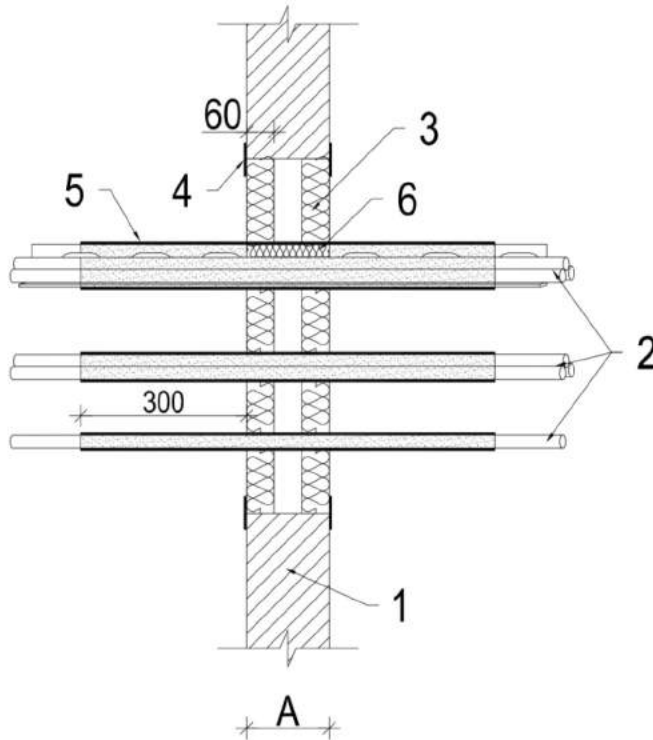
TDS Technical Data Sheet

**INTUSEAL**  
passive fire protection manufacturer



**Fig. 4. Transition with mineral wool filling**

- 1 – flexible wall, thickness  $A \geq 125\text{mm}$
- 2 – non-flammable pipe
- 3 – mineral wool filling with a density of min.  $150\text{ kg/m}^3$ , thickness min.  $60\text{ mm}$ ,  $g \leq 50\text{mm}$
- 4 – INTU FR COAT I intumescent paint  
 $b2 \geq 1\text{mm}$ ;  $c \geq 500\text{mm}$ ;
- 5 – INTU FR COAT A ablative paint,  
 $a \geq 10\text{mm}$ ;  $b1 \geq 1\text{mm}$ ;



**Fig. 5. Penetration seal of electric cables**

- 1 – a partition (wall) with a thickness of  $A \geq 150\text{mm}$
- 2 – single cable / bundle of cables / cable trays
- 3 – mineral wool filling with a density of min.  $150\text{ kg/m}^3$ , thickness min.  $60\text{ mm}$ ,  $g \leq 50\text{mm}$  painted ablative paint INTU FR COAT A (or INTU FR BOARD A)
- 4 – INTU FR COAT A ablative paint on combining wool with a barrier, dry layer thickness min  $1\text{mm}$ , overlapping the  $10\text{mm}$  partition
- 5 – INTU FR COAT I intumescent paint on the length of min  $300\text{mm}$  from the partition, thickness of  $1\text{mm}$ .
- 6 – gaps filled with loose mineral wool and intumescent acrylic mastic INTU FR MASTIC



**Table 1. Parameters for protection of non-flammable pipes**

	Hole	Diameter	Material	Filling	Coating thickness x length [b2 x c]
STEEL PIPES	Larger than the diameter of the pipe by 2x50mm	≤ 42,4 mm	steel	Mineral wool with a density of min. 150 kg/m <sup>3</sup>	1mm x 500mm
		≤ 108,0 mm*	steel		1mm x 500mm
		≤ 159,0 mm*	steel		2mm x 500mm
		≤ 219,0 mm*	steel		2mm x 500mm
	Larger than the diameter of the pipe by 2x50mm	≤ 42,4 mm	steel	Concrete mortar	1mm x 500mm
		≤ 108,0 mm	steel		1mm x 500mm
		≤ 159,0 mm	steel		2mm x 500mm
		≤ 219,0 mm	steel		2mm x 500mm

\*pip eis also painted inside the partition

	Hole	Diameter	Material	Filling	Coating thickness x length [b2 x c]
COPPER PIPES	Larger than the diameter of the pipe by 2x50mm	≤ 6,0 mm	copper	Mineral wool with a density of min. 150 kg/m <sup>3</sup>	1mm x 500mm
		≤ 54,0 mm	copper		1mm x 500mm
		≤ 88,9 mm	copper		1mm x 500mm
	Larger than the diameter of the pipe by 2x50mm	≤ 6,0 mm	copper	Concrete mortar	1mm x 500mm
		≤ 54,0 mm	copper		1mm x 500mm
		≤ 88,9 mm	copper		1mm x 500mm

ELECTRIC CABLES (SINGLE / IN BUNDLE / IN CABLE TRAYS )	Filling	Intumescent paint
	Mineral wool with a density of min. 150kg / m <sup>3</sup> , 60mm thickness, painted with INTU FR COAT A ablative paint (or INTU FR BOARD A ) on both sides of the wall	Thickness min 1mm length from the partition

➔ **FIRE RESISTANCE CLASSIFICATION**

	Filling	DN	EI	EI	EI
			Flexible wall	Wall	Floor
STEEL PIPES	Mineral wool with a density of min. 150 kg/m <sup>3</sup>	≤ 42,4 mm	EI 120	EI 180	EI 240
		≤ 108,0 mm	EI 120	EI 120	EI 120
		≤ 159,0 mm	-	EI 60	EI 180
		≤ 219,0 mm	-	-	EI 90
	Concrete mortar	≤ 42,4 mm	EI 90	EI 240	EI 240
		≤ 108,0 mm	EI 60	EI 240	EI 180
		≤ 159,0 mm	-	EI 60	EI 120
		≤ 219,0 mm	-	EI 60	EI 90
COOPER PIPES	Mineral wool with a density of min. 150 kg/m <sup>3</sup>	≤ 6,0 mm	-	EI 120	EI 240
		≤ 54,0 mm	-	EI 90	EI 240
		≤ 88,9 mm	-	-	EI 180
	Concrete mortar	≤ 6,0 mm	-	EI 120	EI 240
		≤ 54,0 mm	-	EI 120	EI 180
		≤ 88,9 mm	-	-	EI 120
ELECTRIC CABLES	Mineral wool with a density of min. 150 kg/m <sup>3</sup>	-	-	EI 120	-

➔ **PRODUCT DESCRIPTION**

Firestop blocks **INTU FR BRICK** are made of a material that expands under the influence of temperature above 140°C. Intumescent inserts close the hole during fire, preventing the spread of fire and smoke.

- fire resistance class up to **EI 120**
- for use in walls and floors
- available sizes: from Ø50mm to Ø200mm
- possibility to protect the penetrations with/without cables

➔ **APPLICATION**

**INTU FR BRICKs** are installed in openings in walls or floors for protecting cable penetrations (cables ≤ 21mm, cable bundle up to 100mm), as well as openings alone without cables. The intumescent material that swells during a fire fills the hole completely, preventing fire and smoke from entering adjacent rooms. It is possible to run cables through an already installed block in the hole.

**Rigid walls:**

The wall must be at least 150mm thick and have concrete, cellular concrete structure or masonry structure, with a minimum density of 600kg/m<sup>3</sup>

**Rigid floors:**

The floor must be at least 150mm thick and have concrete, cellular concrete structure or masonry structure, with a minimum density of 1700kg/m<sup>3</sup>

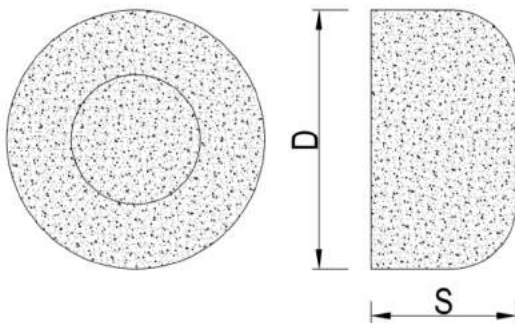


➔ **COMPLIANCE**

**Test reports:**

- LZP02-01993/17/Z00NZP/e
- LZP42-02580/16/Z00NZP/e
- LZP04-01993/17/Z00NZP/e
- Declaration of Performance DoP 9/2019

➔ **AVAILABILITY, FIRE CLASSIFICATION**

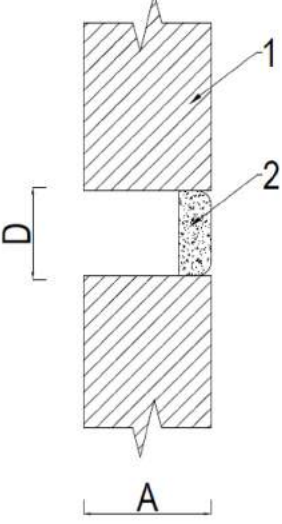
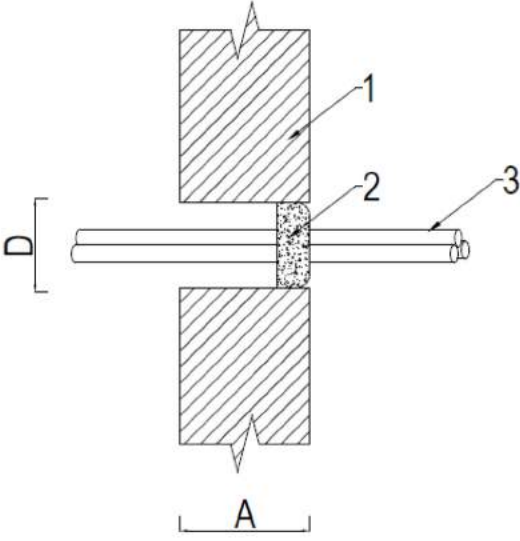


D – diameter of firestop block [mm]  
 S – width of firestop block = 50 mm

Fire resistance class EI 120					
Diameter D [mm]	60	115	140	170	215
Hole diameter [mm]	50-55	105-110	120-135	155-165	200-210
Art. No.	INBR60C	INBR115C	INBR140C	INBR170C	INBR215C



→ SOLUTION DETAILS

	<p><b>Fig. 1. Penetrations without cables</b> D – hole diameter; A – partition width</p> <p>1 – wall/floor partition 2 – INTU FR BRICK firestop block</p>
	<p><b>Fig. 2. Penetrations with cables</b> D – hole diameter; A – partition width</p> <p>1 – wall/floor partition 2 – INTU FR BRICK firestop block 3 – single cable/bunch of cables (any gaps fill with intumescent acrylic mastic INTU FR MASTIC)</p>

→ INSTALLATION METHOD

1. Adjust the size of the firestop block to the size of the hole.
2. Push the block into the hole.
3. For laying cables, cut out the hole in the block, and then run the cables through the fireproof block.

→ TRANSPORT AND STORAGE

Store in dry and cool conditions at temperatures between + 5°C and + 25°C.

# INTU FR EJ SEAL

Fire rated expansion joint seal

TDS Technical Data Sheet

**INTUSEAL**  
passive fire protection manufacturer

## → PRODUCT DESCRIPTION

- fire resistance class up to EI 120
- installation in walls and floors
- easy installation without the use of special tools
- high flexibility
- resistance to difficult weather conditions

The flexible gap filler **INTU FR EJ SEAL** is composed non-flammable foams of different thicknesses, with layers of graphite-based intumescent material. During fire, the material increases its volume and forms firestop foam filling the gap. The system is very flexible, making it ideal for gaps with a high degree of displacement.

## → APPLICATION

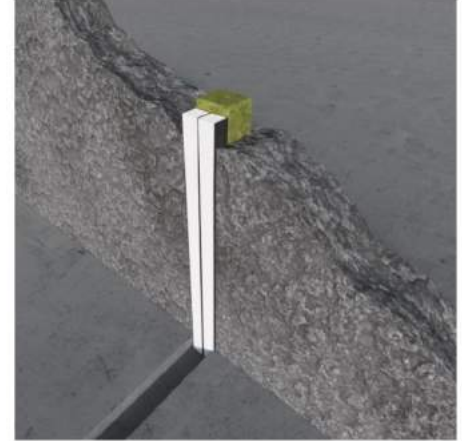
Fire retardant sealing of gaps and fire rated expansion joints in walls and floors with fire resistance class max EI 120 up to 50mm gap width.

### Rigid walls:

The wall must be at least 150mm thick and have concrete, cellular concrete structure or masonry structure, with a minimum density of 600kg/m<sup>3</sup>

### Rigid floors:

The floor must be at least 150mm thick and have concrete, cellular concrete structure or masonry structure, with a minimum density of 1700kg/m<sup>3</sup>



## → COMPLIANCE

Fire classification 01307/18/Z00NXP  
European Technical Assessment 19/0037  
Declaration of Performance DoP 10/2019

## → AVAILABILITY, DIMENSIONS, FIRE RESISTANCE CLASS

Gap width	TYPE	Dimensions width x depth	Art. No.	Fire resistance class	EI WALL Horizontal	EI WALL Vertical
from 10 mm	10	14 x 25 mm	INEJS10/120	EI 120	EI 120	EI 120
from 11 to 20 mm	20	34 x 30 mm	INEJS20/120	EI 120	EI 120	EI 120
from 21 to 30 mm	30	44 x 35 mm	INEJS30/120	EI 120	EI 120	EI 120
from 31 to 40 mm	40	54 x 40 mm	INEJS40/120	EI 120	EI 120	EI 60
from 40 to 50 mm	50	64 x 40 mm	INEJS50/120	EI 120	EI 120	EI 60

## → TRANSPORT AND STORAGE

It is recommended to store the product in dry internal conditions.



# INTU FR EJ SEAL

Fire rated expansion joint seal

TDS Technical Data Sheet

**INTUSEAL**  
passive fire protection manufacturer

## → INSTALLATION METHOD

1. The surface of the joint must be clean, dry and free of dust before installation.
2. Choose the right size of the filler depending on the width of the gap.
3. Compress the **INTU FR EJ SEAL** flexible filler and insert it into the gap so that the intumescent material adheres to the partition.
4. Fill the remaining gap with mineral wool with a density of min. 50kg/m<sup>3</sup>.
5. **INTU FR EJ SEAL** should be placed on either side of a wall or a floor, flush with the partition.

## → SOLUTION DETAILS

### EXPANSION JOINT IN A WALL

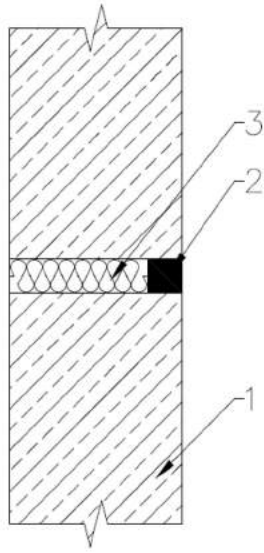


Fig. 1. Gap in a wall

- 1 – wall
- 2 – flexible filler **INTU FR EJ SEAL**
- 3 – mineral wool with a density of min. 50kg/m<sup>3</sup>

### EXPANSION JOINT IN A FLOOR

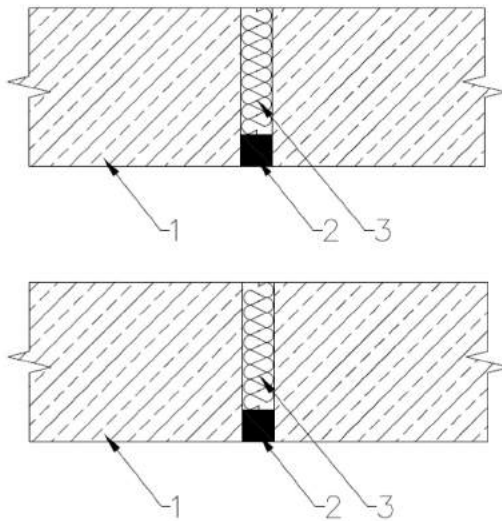


Fig. 2. Gap in a floor

- 1 – floor
- 2 – **INTU FR EJ SEAL** flexible filler applied from the bottom or top of the floor
- 3 – mineral wool with a density of min. 50kg/m<sup>3</sup>

# INTU FR GRILLE

Intumescent FR Grille

TDS Technical Data Sheet

**INTUSEAL**  
passive fire protection manufacturer

## → PRODUCT DESCRIPTION

- fire resistance: 60, 120 and 240 minutes
- air flow up to 80%
- maximum dimensions:
  - single round grille - Ø 400 [mm];
  - single rectangular grille - 600 x 600 [mm]
- not standard sizes

Firestop ventilation grilles **INTU FR GRILLE** are made from material that expands under the influence of temperature above 140°C. Intumescent inserts close the ventilation holes during a fire, preventing the spread of flame and smoke.

## → APPLICATION

**INTU FR GRILLES** are installed in the ventilation holes in walls and floors. The material swelling during a fire fills the hole completely, preventing flame and smoke from entering adjacent rooms.

### Rigid walls:

The wall must be at least 150mm thick and have concrete, cellular concrete structure or masonry structure, with a minimum density of 600kg/m<sup>3</sup>

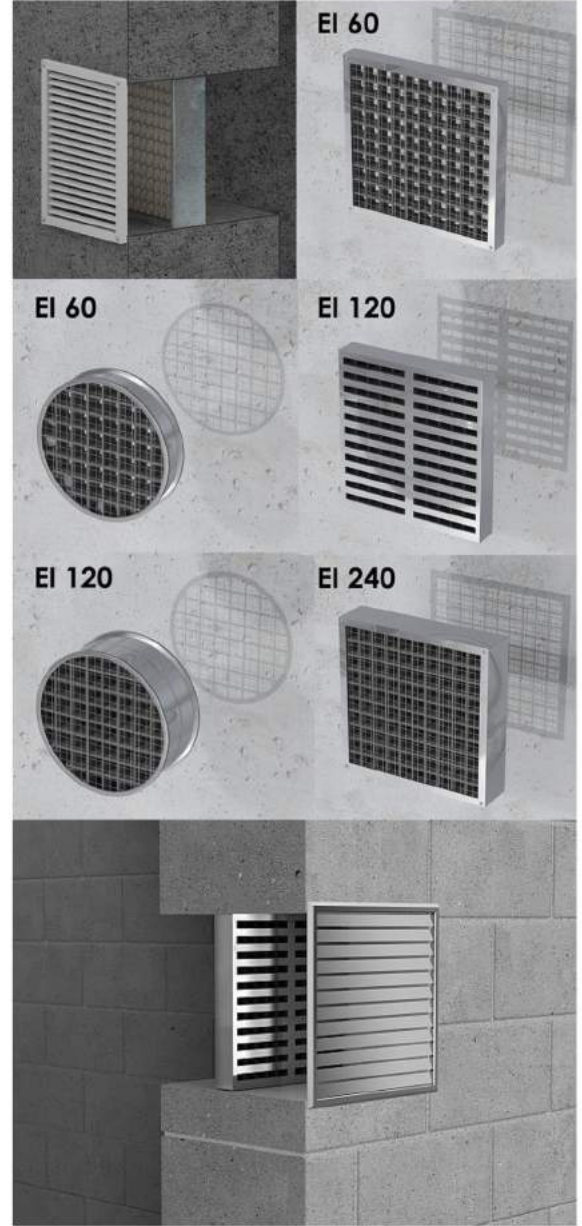
### Rigid floors:

The floor must be at least 150mm thick and have concrete, cellular concrete structure or masonry structure, with a minimum density of 1700kg/m<sup>3</sup>

## → COMPLIANCE

Technical assessment 01245/18/Z00NZP

Declaration of Performance DoP 11/2019





### ➔ AVAILABILITY, FIRE RESISTANCE CLASS (RECTANGULAR GRILLE)

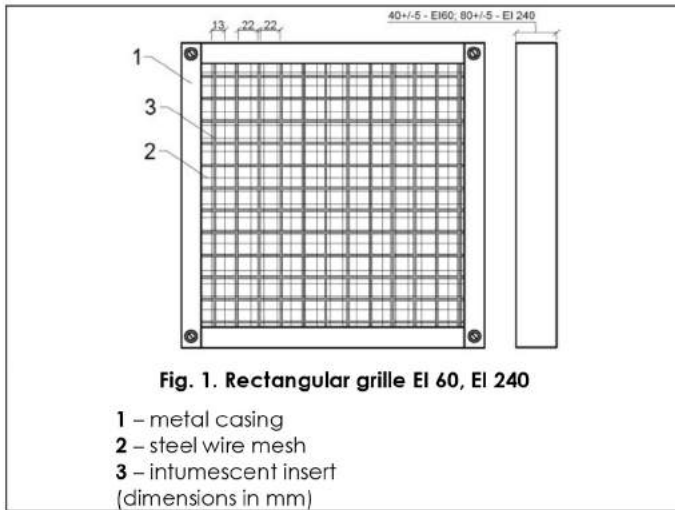


Fig. 1. Rectangular grille EI 60, EI 240

1 – metal casing  
2 – steel wire mesh  
3 – intumescent insert  
(dimensions in mm)

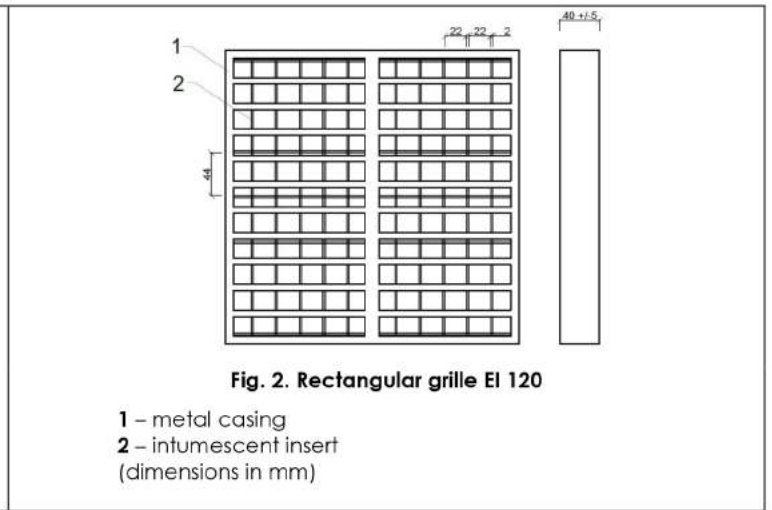


Fig. 2. Rectangular grille EI 120

1 – metal casing  
2 – intumescent insert  
(dimensions in mm)

Height [mm]	EI 60 / Width [mm] / Art. No.											
	100	150	200	225	250	300	350	400	450	500	550	600
100	INGRR60/100x100	INGRR60/150x100	INGRR60/200x100	INGRR60/225x100	INGRR60/250x100	INGRR60/300x100	INGRR60/350x100	INGRR60/400x100	INGRR60/450x100	INGRR60/500x100	INGRR60/550x100	INGRR60/600x100
150		INGRR60/150x150	INGRR60/200x150	INGRR60/225x150	INGRR60/250x150	INGRR60/300x150	INGRR60/350x150	INGRR60/400x150	INGRR60/450x150	INGRR60/500x150	INGRR60/550x150	INGRR60/600x150
200			INGRR60/200x200	INGRR60/225x200	INGRR60/250x200	INGRR60/300x200	INGRR60/350x200	INGRR60/400x200	INGRR60/450x200	INGRR60/500x200	INGRR60/550x200	INGRR60/600x200
225				INGRR60/225x225	INGRR60/250x225	INGRR60/300x225	INGRR60/350x225	INGRR60/400x225	INGRR60/450x225	INGRR60/500x225	INGRR60/550x225	INGRR60/600x225
250					INGRR60/250x250	INGRR60/300x250	INGRR60/350x250	INGRR60/400x250	INGRR60/450x250	INGRR60/500x250	INGRR60/550x250	INGRR60/600x250
300						INGRR60/300x300	INGRR60/350x300	INGRR60/400x300	INGRR60/450x300	INGRR60/500x300	INGRR60/550x300	INGRR60/600x300
350							INGRR60/350x350	INGRR60/400x350	INGRR60/450x350	INGRR60/500x350	INGRR60/550x350	INGRR60/600x350
400								INGRR60/400x400	INGRR60/450x400	INGRR60/500x400	INGRR60/550x400	INGRR60/600x400
450									INGRR60/450x450	INGRR60/500x450	INGRR60/550x450	INGRR60/600x450
500										INGRR60/500x500	INGRR60/550x500	INGRR60/600x500
550											INGRR60/550x550	INGRR60/600x550
600												INGRR60/600x600

Height [mm]	EI 120 / Width [mm] / Art. No.				
	100	150	200	250	300
100	INGRR120/100x100	INGRR120/150x100	INGRR120/200x100	INGRR120/250x100	INGRR120/300x100
150		INGRR120/150x150	INGRR120/200x150	INGRR120/250x150	INGRR120/300x150
200			INGRR120/200x200	INGRR120/250x200	INGRR120/300x200
250				INGRR120/250x250	INGRR120/300x250
300					INGRR120/300x300

It applies to all INTU FR GRILLES:

**Standard** size of grilles:

[WIDTH x HEIGHT]

means:

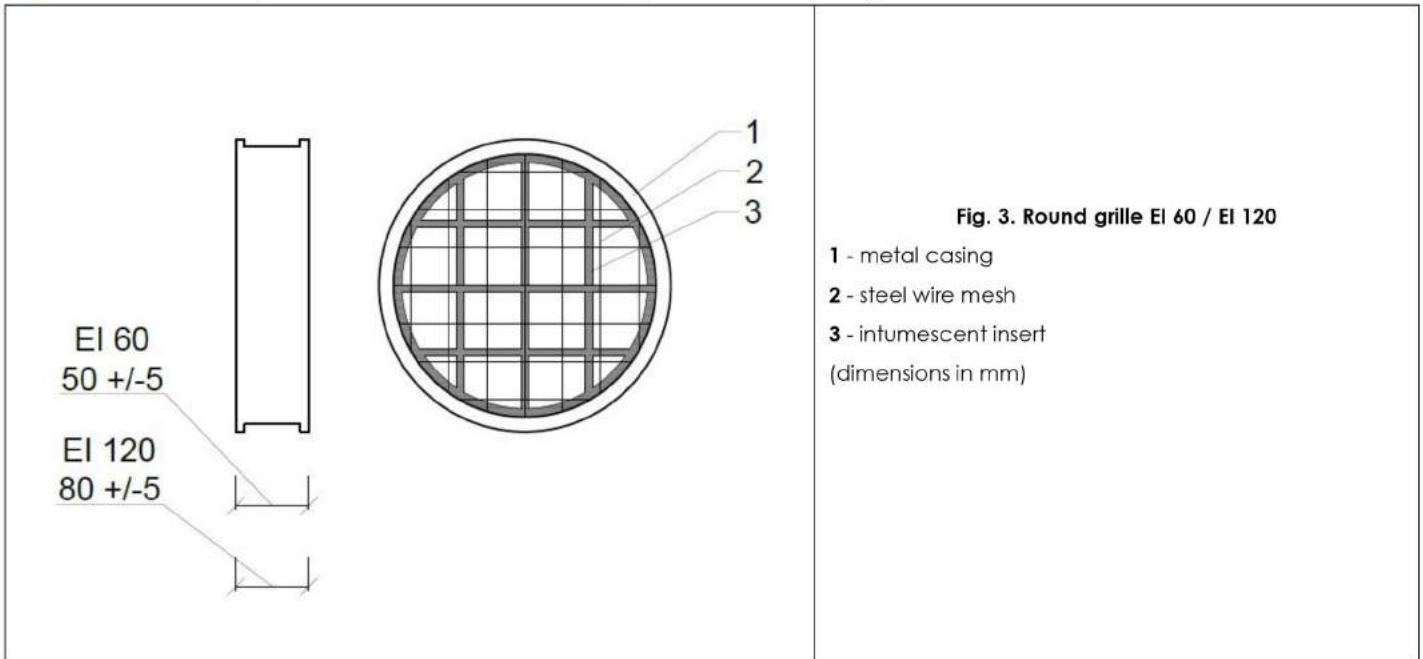
[LARGER DIMENSION x SMALLER DIMENSION]

You can order **INTU FR GRILLE**

in any size – the price is set individually.

Height [mm]	EI 240 / Width [mm] / Art. No.											
	100	150	200	225	250	300	350	400	450	500	550	600
100	INGRR240/100x100	INGRR240/150x100	INGRR240/200x100	INGRR240/225x100	INGRR240/250x100	INGRR240/300x100	INGRR240/350x100	INGRR240/400x100	INGRR240/450x100	INGRR240/500x100	INGRR240/550x100	INGRR240/600x100
150		INGRR240/150x150	INGRR240/200x150	INGRR240/225x150	INGRR240/250x150	INGRR240/300x150	INGRR240/350x150	INGRR240/400x150	INGRR240/450x150	INGRR240/500x150	INGRR240/550x150	INGRR240/600x150
200			INGRR240/200x200	INGRR240/225x200	INGRR240/250x200	INGRR240/300x200	INGRR240/350x200	INGRR240/400x200	INGRR240/450x200	INGRR240/500x200	INGRR240/550x200	INGRR240/600x200
225				INGRR240/225x225	INGRR240/250x225	INGRR240/300x225	INGRR240/350x225	INGRR240/400x225	INGRR240/450x225	INGRR240/500x225	INGRR240/550x225	INGRR240/600x225
250					INGRR240/250x250	INGRR240/300x250	INGRR240/350x250	INGRR240/400x250	INGRR240/450x250	INGRR240/500x250	INGRR240/550x250	INGRR240/600x250
300						INGRR240/300x300	INGRR240/350x300	INGRR240/400x300	INGRR240/450x300	INGRR240/500x300	INGRR240/550x300	INGRR240/600x300
350							INGRR240/350x350	INGRR240/400x350	INGRR240/450x350	INGRR240/500x350	INGRR240/550x350	INGRR240/600x350
400								INGRR240/400x400	INGRR240/450x400	INGRR240/500x400	INGRR240/550x400	INGRR240/600x400
450									INGRR240/450x450	INGRR240/500x450	INGRR240/550x450	INGRR240/600x450
500										INGRR240/500x500	INGRR240/550x500	INGRR240/600x500
550											INGRR240/550x550	INGRR240/600x550
600												INGRR240/600x600

### ➔ AVAILABILITY, FIRE RESISTANCE CLASS (ROUND GRILLE)



Fire resistance class	Diameter [mm] / Art. No.										
	100	125	150	160	200	225	250	300	315	350	400
EI 60	INGRC 60/100	INGRC 60/125	INGRC 60/150	INGRC 60/160	INGRC 60/200	INGRC 60/225	INGRC 60/250	INGRC 60/300	INGRC 60/315	INGRC 60/350	INGRC 60/400
EI 120	INGRC 120/100	INGRC 120/125	INGRC 120/150	INGRC 120/160	INGRC 120/200	INGRC 120/225	INGRC 120/250	INGRC 120/300	INGRC 120/315	INGRC 120/350	INGRC 120/400

There is a possibility to order **INTU FR GRILLE** in any size - the price is set individually.



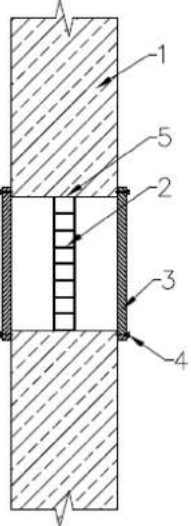
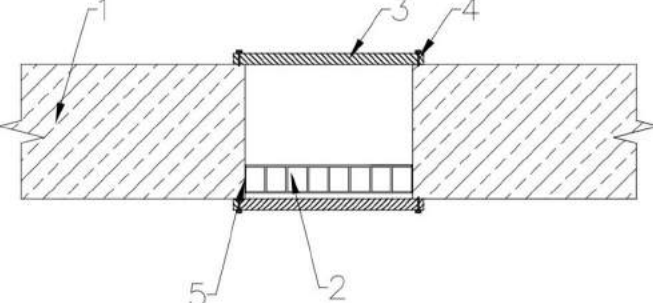
# INTU FR GRILLE

Intumescent FR Grille

TDS Technical Data Sheet

**INTUSEAL**  
passive fire protection manufacturer

## → SOLUTION DETAILS

	<p><b>Fig. 4. Wall cross-section</b></p> <ul style="list-style-type: none"><li>1 – wall</li><li>2 – <b>INTU FR GRILLE</b> ventilation grille</li><li>3 – masking plate (eg <b>INTU ATP</b>)</li><li>4 – steel screws</li><li>5 – intumescent acrylic mastic eg <b>INTU FR MASTIC</b></li></ul>
	<p><b>Fig. 5. Floor cross-section</b></p> <ul style="list-style-type: none"><li>1 – floor</li><li>2 – <b>INTU FR GRILLE</b> ventilation grille</li><li>3 – masking plate (eg <b>INTU ATP</b>)</li><li>4 – steel screws</li><li>5 – intumescent acrylic mastic eg <b>INTU FR MASTIC</b></li></ul>

## → INSTALLATION METHOD

1. Adjust the size of the grille to the size of the hole.
2. Apply a small amount of intumescent acrylic mastic eg **INTU FR MASTIC** to the grille along its edge.
3. Push the grille into the hole.
4. Fill the remaining gaps and cavities with firestop acrylic putty.
5. Fasten the masking plates (eg **INTU ATP**) on both sides of the partition using steel screws.

## → TRANSPORT AND STORAGE

Store in dry and cool conditions at temperatures between +5°C and +25°C.

# INTU FR GRILLE

Intumescent FR Grille

TDS Technical Data Sheet

**INTUSEAL**  
passive fire protection manufacturer

## → CONNECTOR FOR INTU FR GRILLE

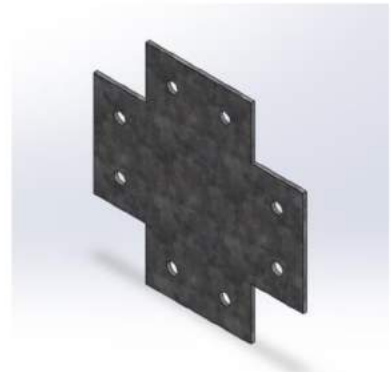
Connectors the model T and model X are used to connect rectangular intumescent firestop ventilation grills INTU FR GRILLE to each other. Connectors should be attached to the metal casing using rivets or steel sheet metal screws.

## → AVAILABILITY

Model connector
Model T
Model X



Connector – model T



Connector – model X

## → HOW TO CONNECT INTU FR GRILLE

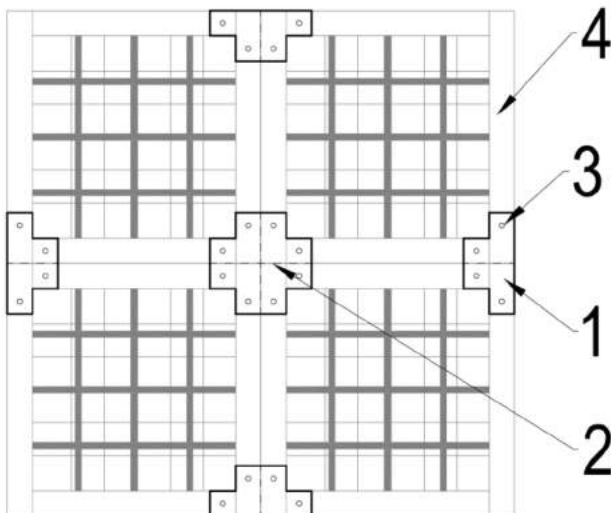


Fig. 6. The method of connection INTU FR GRILLE

- 1 – Connector – model T
- 2 – Connector – model X
- 3 – steel rivet – Ø3mm
- 4 – intumescent grille INTU FR GRILLE

Apply a small amount of intumescent acrylic mastic (eg INTU FR MASTIC) for a grill along its edge.

Remove all other joints and cavities with intumescent acrylic mastic (eg INTU FR MASTIC)



# INTU AIR TRANSFER PLATE

Louvre masking grille

TDS Technical Data Sheet

**INTUSEAL**  
passive fire protection manufacturer

## → PRODUCT DESCRIPTION

Louvre masking grille **INTU AIR TRANSFER PLATE** is used for aesthetic protection of ventilation inlets/outlets. **INTU AIR TRANSFER PLATE** is manufactured using modern production techniques and precision stamping machines. The material is 0.9 mm thick steel. The louvres are placed every 8.5mm, with a 30% downward slant.

## → APPLICATION

In walls and floors as well as doors with installed intumescent ventilation grilles (eg **INTU FR GRILLE**).

## → INSTALLATION

**INTU AIR TRANSFER PLATE** is installed using commonly available steel screws through the holes in the flange.

## → AVAILABILITY

Colors:

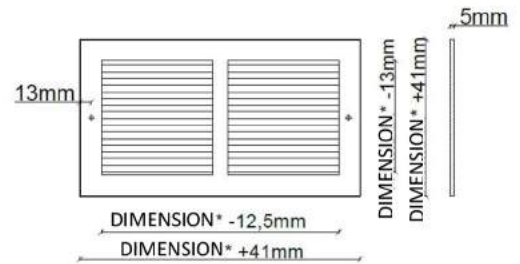
**Standard color:** satin.

**Color on request (no extra cost):** white.

**Color on request (extra cost):** any RAL; the price is agreed individually.

Dimensions:

The standard size [WIDTH x HEIGHT] where the width is larger than the height [LARGER x SMALLER]. It is possible to order a "reverse dimension" i.e. height is larger than the width; in this case, please provide additional information in the order.



## → TRANSPORT AND STORAGE

Store in dry and cool conditions at temperatures between + 5°C and + 25°C.

## → AVAILABILITY TABLE, LOUVER FREE AREA

Height [mm]	Width [mm]									
	Free area [cm <sup>2</sup> ]									
	Item No. = INTAP/S + „width x height“									
	102	152	203	254	305	356	406	457	508	610
102	63 cm <sup>2</sup>	98 cm <sup>2</sup>	125 cm <sup>2</sup>	161 cm <sup>2</sup>	197 cm <sup>2</sup>	232 cm <sup>2</sup>	241 cm <sup>2</sup>	295 cm <sup>2</sup>	322 cm <sup>2</sup>	393 cm <sup>2</sup>
	INATP/S102x102	INATP/S152x102	INATP/S203x102	INATP/S254x102	INATP/S305x102	INATP/S356x102	INATP/S406x102	INATP/S457x102	INATP/S508x102	INATP/S610x102
152		152 cm <sup>2</sup>	193 cm <sup>2</sup>	249 cm <sup>2</sup>	304 cm <sup>2</sup>	359 cm <sup>2</sup>	373 cm <sup>2</sup>	456 cm <sup>2</sup>	497 cm <sup>2</sup>	608 cm <sup>2</sup>
		INATP/S152x152	INATP/S203x152	INATP/S254x152	INATP/S305x152	INATP/S356x152	INATP/S406x152	INATP/S457x152	INATP/S508x152	INATP/S610x152
203			262 cm <sup>2</sup>	336 cm <sup>2</sup>	411 cm <sup>2</sup>	486 cm <sup>2</sup>	505 cm <sup>2</sup>	617 cm <sup>2</sup>	673 cm <sup>2</sup>	823 cm <sup>2</sup>
			INATP/S203x203	INATP/S254x203	INATP/S305x203	INATP/S356x203	INATP/S406x203	INATP/S457x203	INATP/S508x203	INATP/S610x203
254				424 cm <sup>2</sup>	519 cm <sup>2</sup>	613 cm <sup>2</sup>	636 cm <sup>2</sup>	778 cm <sup>2</sup>	849 cm <sup>2</sup>	1037 cm <sup>2</sup>
				INATP/S254x254	INATP/S305x254	INATP/S356x254	INATP/S406x254	INATP/S457x254	INATP/S508x254	INATP/S610x254
305					626 cm <sup>2</sup>	740 cm <sup>2</sup>	768 cm <sup>2</sup>	939 cm <sup>2</sup>	1024 cm <sup>2</sup>	1252 cm <sup>2</sup>
					INATP/S305x305	INATP/S356x305	INATP/S406x305	INATP/S457x305	INATP/S508x305	INATP/S610x305
356						866 cm <sup>2</sup>	900 cm <sup>2</sup>	1100 cm <sup>2</sup>	1200 cm <sup>2</sup>	1466 cm <sup>2</sup>
						INATP/S356x356	INATP/S406x356	INATP/S457x356	INATP/S508x356	INATP/S610x356
406							1031 cm <sup>2</sup>	1261 cm <sup>2</sup>	1375 cm <sup>2</sup>	1681 cm <sup>2</sup>
							INATP/S406x406	INATP/S457x406	INATP/S508x406	INATP/S610x406
457								1422 cm <sup>2</sup>	1551 cm <sup>2</sup>	1895 cm <sup>2</sup>
								INATP/S457x457	INATP/S508x457	INATP/S610x457
508									1726 cm <sup>2</sup>	2110 cm <sup>2</sup>
									INATP/S508x508	INATP/S610x508
610										2539 cm <sup>2</sup>
										INATP/S610x610

# INTU STRIP F

Intumescent seals

TDS Technical Data Sheet

**INTUSEAL**  
passive fire protection manufacturer

## → PRODUCT DESCRIPTION

The firestop seal **INTU STRIP F** is made of graphite-based material. The material swells under the influence of high temperature, increasing its volume 35 times. The expanding product prevents the spread of fire through joints and gaps in the fire door. Fire resistance class up to **EI 240\***.

## → APPLICATION

The **INTU STRIP F** is designed for sealing gaps in fire doors.

## → INSTALLATION METHOD

The seal is installed around the door in previously prepared grooves. In order to install the seal, use your own gluing technology; fit it exactly to the milled groove along its entire length.

## → TECHNICAL PROPERTIES

Color	black
Self-adhesive tape	NO
Thickness [mm]	2,0; 2,5
Width [mm]	10 ÷ 60
Length [m]	25; 50; 100
Density [g/cm <sup>3</sup> ]	1,2 ± 15%
Swelling temperature [°C]	Ca. 150
Swelling ratio	≤ 35,97
Swelling pressure [N/mm <sup>2</sup> ]	Ca. 0,815
Fire resistance	min. 60 minutes

## → AVAILABILITY

- rolls with a length of 10/25/50 m
- thickness from 2 to 2.5 mm
- width from 10 to 60 mm

## → COMPLIANCE

Door fire test report **LZP43-02580/16/Z00NZP**

Swell pressure report **LZP08-2580/16/Z00NZP**

Swell height report **LZP09-2580/16/Z00NZP**

Declaration of Performance **DoP 13/2019**



## → TRANSPORT AND STORAGE

It is recommended to store in dry internal conditions at temperatures between + 5°C and + 25°C



# INTU STRIP FS

Intumescent seals (with adhesive tape)

TDS Technical Data Sheet

**INTUSEAL**  
passive fire protection manufacturer

## → PRODUCT DESCRIPTION

The firestop seal with self-adhesive tape **INTU STRIP FS** is made of graphite-based material and equipped with self-adhesive layer. The material swells under the influence of high temperature, increasing its volume 35 times. The expanding product prevents the spread of fire through joints and gaps in the fire door. Fire resistance class up to **EI 240\***.

## → APPLICATION

The **INTU STRIP FS** is designed for sealing gaps in fire doors.

## → INSTALLATION METHOD

The seal is mounted around the door in previously prepared grooves. In order to install the seal, remove the protective layer of the adhesive tape, align the seal and press it exactly at the milled groove along its entire length.

## → TECHNICAL PROPERTIES

Color	black
Self-adhesive tape	YES
Type of glue	synthetic rubber
Thickness [mm]	2,0; 2,5
Width [mm]	10 ÷ 60
Length [m]	25; 50; 100
Density [g/cm <sup>3</sup> ]	1,2 ± 15%
Swelling temperature [°C]	Ca. 150
Swelling ratio	≤ 35,97
Swelling pressure [N/mm <sup>2</sup> ]	Ca. 0,815
Fire resistance	min. 60 minutes

## → AVAILABILITY

- rolls with a length of 10/25/50 m
- thickness from 2 to 2.5 mm
- width from 10 to 60 mm

## → COMPLIANCE

Door fire test report **LZP43-02580/16/Z00NZP**

Swell pressure report **LZP08-2580/16/Z00NZP**

Swell height report **LZP09-2580/16/Z00NZP**

Declaration of Performance **DoP 13/2019**



## → TRANSPORT AND STORAGE

It is recommended to store in dry internal conditions at temperatures between + 5°C and + 25°C

# INTU STRIP FC

Intumescent seals (with adhesive tape)

TDS Technical Data Sheet

**INTUSEAL**  
passive fire protection manufacturer

## → PRODUCT DESCRIPTION

The firestop seal with self-adhesive tape **INTU STRIP FC** is made of graphite-based material and equipped with self-adhesive layer. The material swells under the influence of high temperature, increasing its volume 35 times. The expanding product prevents the spread of fire through joints and gaps in the fire door. Fire resistance class up to **EI 240\***.

## → APPLICATION

The **INTU STRIP FC** is designed for sealing gaps in fire doors.

## → INSTALLATION METHOD

The seal is mounted around the door in previously prepared grooves. In order to install the seal, remove the protective layer of the adhesive tape, align the seal and press it exactly at the milled groove along its entire length.

## → TECHNICAL PROPERTIES

Color	black
Self-adhesive tape	YES
Type of glue	acrylic
Thickness [mm]	2,0; 2,5
Width [mm]	10 ÷ 60
Length [m]	25; 50; 100
Density [g/cm <sup>3</sup> ]	1,2 ± 15%
Swelling temperature [°C]	Ca. 150
Swelling ratio	≤ 35,97
Swelling pressure [N/mm <sup>2</sup> ]	Ca. 0,815
Fire resistance	min. 60 minutes

## → AVAILABILITY

- rolls with a length of 10/25/50 m
- thickness from 2 to 2.5 mm
- width from 10 to 60 mm

## → COMPLIANCE

Door fire test report **LZP43-02580/16/Z00NZP**

Swell pressure report **LZP08-2580/16/Z00NZP**

Swell height report **LZP09-2580/16/Z00NZP**

Declaration of Performance **DoP 13/2019**



## → TRANSPORT AND STORAGE

It is recommended to store in dry internal conditions at temperatures between + 5°C and + 25°C



# INTU FR GUARD

Fire retardant impregnate

TDS Technical Data Sheet

**.INTUSEAL**  
passive fire protection manufacturer

## → PRODUCT DESCRIPTION

The impregnate **INTU FR GUARD** is intended for fire protection of fabrics, decorations and clothing not exposed to wetting. The product gives cotton, wool, polyester, polyamide and decorative mosses a non-flammability feature.

**INTU FR GUARD** has the form of a white-gray powder granulate. The impregnate is used in the form of an aqueous solution. It contains phosphorus and ammonium compounds and surfactants that help wetting impregnated fabrics.



## → APPLICATION

- Schools, kindergartens,
- Public administration buildings,
- Residential buildings, companies,
- Theaters, cinemas, hotels,
- Congress centers,
- Shopping centers
- Other objects

## → TRANSPORT AND STORAGE

Store in dry and cool conditions at temperatures between + 5°C and + 25°C. Shelf life as specified on the product label.

## → INSTALLATION METHOD

### Preparation for impregnation

**INTU FR GUARD LIQUID** - is a ready to use preparation containing phosphorus and ammonium compounds and surfactants that help wetting impregnated fabrics. The works should be carried out in the temperature range 15-30°C.

**INTU FR GUARD GRANULATE** – the product should be poured gradually into heated water up to approx. 50°C in the proportion of **1kg of impregnate to 4 liters of water** – stirring constantly, until the granules dissolve completely. The solution should be prepared a few hours before use.

## → AVAILABILITY

Product	Type	Art. No.
INTU FR GUARD LIQUID	8 L	INGU8L
INTU FR GUARD GRANULATE	1l ( 0,8 kg ) (3,6 l solution)	INGU1G
INTU FR GUARD GRANULATE	8l ( 6,4 kg ) (25,6 l solution)	INGU8G

# INTU FR GUARD

Fire retardant impregnate

TDS Technical Data Sheet

**INTUSEAL**  
passive fire protection manufacturer

## Impregnation

- **Method of bath** - the expanded fabric should be immersed in impregnation for a period of 5 minutes. After removal, the fabric dried. You can not impregnate materials rolled into bales.
- **Spray or lubrication method** - fabrics that can not be soaked (carpers, pavements, decorative mosses) are impregnated by spraying or lubricating the fabric for complete hydration.

## Drying fabrics after impregnation

Impregnated fabrics should be dried at room temperature. The process can be accelerated by raising the temperature to max 50° C.

## Cleaning fabrics after impregnation:

After washing or soaking the fabric should be impregnated again because the impregnation is washable.

## → YIELD

Standards of wear: the amount of impregnation used per unit of fabric Surface depends on the finish and absorbency of the material.

## Approximate consumption of impregnate: 1L for 5-10m<sup>2</sup>

Type of fabric	Approximate intake g / m <sup>2</sup>
Wool	100 ÷ 140
Cotton	50 ÷ 60
Polyamide	15 ÷ 30
Polyester	10 ÷ 40
Moss	150 ÷ 170

## → COMPLIANCE

Fire classification 01928/18/Z00NXP  
Research report LXP01-01925/18/Z00NXP  
Research report LXP02-01925/18/Z00NXP  
Research report LXP03-01925/18/Z00NXP  
Research report LXP04-01925/18/Z00NXP  
Research report LXP05-01925/18/Z00NXP  
Declaration of Performance DoP 14/2019



**.INTUSEAL**  
*passive fire protection manufacturer*

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